

**SME Manufacturing Insights
Work Measurement**

Scene 1.
SME GRAPHICS OPENING/
Manufacturing Insights.

NARRATOR (V.O.)

Manufacturing Insights! Manufacturing

Engineering Magazine's Video Series for
Process improvement. This program explains
current practices in Work Measurement, . . .

Scene 2.
TITLE:

Work Measurement

and will show how manufacturers use this procedure to measure
productivity improvements. We'll see a basic time study . . .

Scene 3.
CUTS of Case History
#1. (Cooper Ins .Corp.)
. . . conducted at Cooper Instrument
cooper
Corporation on a final assembly operation
02.11.02
to reflect a change to a new press.

Scene 4.
CUTS from MacGreggor Golf
inspection area.03:11:35

And, how MacGreggor Golf uses a work measurement system to develop
standards and generate routings. And, we'll see how . . .

Scene 5.
CUTS from Cramerton Automotive;
Interior inspection area 11:04:17:09

. . . Cramerton Automotive utilizes work
sampling techniques on an inspection and
packing line for automotive fabric. And how .

Scene 6.

Kohler
15.06.44
. . . Kohler, a large fixture manufacturer

depends on work measurement to establish and
correct standards for both direct and
indirect labor.

Scene 7.
ESTABLISHING shot of Royal
Dossett. CG: Royal J. Dossett,
President Royal J. Dossett Corporation
01:00:54

We will also hear from Royal Dossett, an
expert on work measurement application and
technology, and . . .

Scene 8.
ESTABLISHING shot of Donovan Young
CG: Donovan Young, Associate Professor
of Industrial and Systems Engineering at
Georgia Tech. 07:04:11

. . . Donovan Young, Associate Professor of
Industrial and Systems Engineering at Georgia
Tech.

FADE TO BLACK

Scene 9.
ARCHIVE footage,
rouge factory
03.34.30
music up and under
Engineer's have always focused
on ways to improve manufacturing processes.

Scene 10.
Graphics reel
CG: Frederick Taylor
Frank and Lillian Gilbreth
Frederick Taylor, A
Frank and Lil B
camera 02.01.40 C
wire model 02.03.41 D

Today's Manufacturing Engineers continue to benefit from the early work
measurement techniques of industrial engineers like Frederick W. Taylor

and Frank and Lillian Gilbreth. And, regardless of the level of technology of their instruments, their original concepts developed with tools like this wire path model are still valid.

Scene 14.

ARCHIVE footage.

Rouge Factory

03.56.06 A

Historically, workers have resisted the

efforts of "efficiency experts".

03.35.11B They were concerned that the intentions were

to "fix wage rates" for piece work; speed up

production lines and only benefit **"the**

company". Today, most workers realize that an

03.48.49 C

efficiently run company is the only way to

survive in business. But for years this early

03.51.45 D

resistance did inhibit efforts to provide

realistic measurement for both labor and

management.

Scene 15.

MONTAGE of current manufacturing

scenes; CG: Per narration.

Heading into the 21st century, it is

03.09.19 A

becoming evident that Work Measurement,

can still be counted on as an important tool

11.06.58 B

to enable various management techniques

to succeed.

MUSIC OUT

Scene 16.

CG: Royal Dossett.

Work Measurement Expert

Royal J. Dossett Corporation

01:08:04

ROYAL DOSSETT

"There seems to be in the last 10 years
or so a proliferation of new management
techniques, and they all seem to have three- letter buzzwords. There's
JIT, ABC, TQM, and
on and on.

They all seem to gain popularity for a while; people write books: do
courses;
make videotapes on the current fad, but underlying all these
techniques is a need
for good time values. Work measurement is
not a management technique per se. Work
measurement is a tool. As it says, we are
measuring things. We are measuring things to
get good time values, and these good time
values are necessary to make some of these
other techniques, the management techniques
successful. So there has always been a need
for work measurement, even if the names of
the management techniques change."

01:08:51:05

Scene 17.A

ESTABLISHING shot of Donovan
Young. CG: Donovan Young,
Associate Professor of Industrial and
Systems Engineering, Georgia Tech.

07:00:45

NARRATOR V.O.

Professor Donovan Young of Georgia Tech's
School of Industrial and Systems Engineering

teaches Work Measurement and Work

Design. . .

07:07:13 B
DONOVAN YOUNG

"There are a lot of uses of work measurement. One, of course, is that
you want to be able to bid on or have cost
control of how long it takes to do a
particular task or a particular operation.
That use, that's classic use of work measurement that's been around
since Frank
Gilbreth found out that you could do brick
laying three times faster than before by
splitting up the tasks that were done by
having the mason himself not have to do the

mixing of cement and adjusting the scaffolds
and all that.

You need measurement so you can find out whether, when you change a
method, is it actually making things go faster or not."

07:08:04:01

07:08:40:22 C "I would say that one of the main purposes
in today's workplace is to balance the labor of different jobs, so
that workers feel they are being fairly treated, or so
that it removes one bone of contention where people are working
together and someone has a lot of idle time and someone
doesn't have that idle time."

07:09:09:20

Scene 18.
GRAPHIC BUILD. Two stage background
created progressively in SYNC with
Narration.

LEFT side **Work Measurement**
per sketch.

NARRATOR V.O.

Work Measurement, which basically consists of

**time studies -- motion analysis -- and work
sampling studies ...**

ADD "Enables Arrow" and
Manufacturing Management
. (ADD text IN SYNC.)

. . . enables **Manufacturing Management** to

accurately **Calculate Standard Product Costs**

-- Estimate New Product Costs -- Staff

Workplaces More Efficiently -- Accurately

Distribute Work And Meet Customer Deadlines! Many companies rely on
motion analysis, using a predetermined motion time system. Motion
Analysis involves dividing a task into its fundamental motions, such as
Reach -- Grasp -- Move --Position -- Release, and so forth. The times
for the motions are looked up from a pre-existing database or datacard.
The times are then added up to determine how long it SHOULD take to
perform the task. Note that unlike a time study, the task is not timed;
nor is the operators performance leveled, all times come from pre-
determined data. A completed motion analysis actually DICTATES exactly
how the task is to be performed -- motion by motion. Popular
predetermined motion time systems available on the market today include
MTM, MOST, MST, and MODAPS --each with extensive data on predetermined

motion times. An additional predetermined system, MTM-UAS, has been designed for batch production, where work elements are not routine, or not totally definable.

Scene 20.

U-matic

IBM 05.00.54

On-going uses of Work Measurement are proof

of their value, but will these same concepts

BANDIT

be relevant to our increasingly hi-tech

03.17.45

manufacturing environment?

Scene 21.

Donovan Young (SYNC).

DONOVAN YOUNG

07:04:29 The concepts of Work Measurement will always be relevant. By that I mean those concepts such as breaking a task into elements, breaking elements into motions, measuring somehow what the duration is, keeping some sort of data as to what the duration should be for a task or a motion or an element. Those principles will always be with us.

07.04.58

Scene 22.

ROYAL DOSSETT

01:04:36:16 "As far as the use of computers, we have to recognize that the tools have not changed. A time study is a time study, motion analysis is motion analysis. The basic techniques have not changed. What we are using computers and data collectors for is to improve the accuracy and speed up the use of these techniques."

FADE TO BLACK

Scene 23.

deleted

Scene 24.

COOPER EXTERIOR.

03:01;52:

At Cooper Instrument Corporation in

Middlefield, Connecticut a manufacturer of

Temperature, Humidity and Time Instruments,
Gages B
Timers work measurement has been a "way of life" for
some time.

Scene 24c
CG: Time Study
CG: each highlighted word on cue

CG **BOLDED TEXT** Cooper uses a **time study** to develop
02.01.02 c standard times. First, a task is divided 02.05.11 d
into discrete work steps, called **elements.** 02.05.50 e Then
several observations of each element . * are timed and
averaged to determine **normal 02.09.08 f element times.** **Pace**
ratings are usually * applied before averaging to
compensate for 02.16.01 g operator skill and effort. Allowances,
for * such things as personal time and delays, *
are added to **normal times** to obtain * **Standard**
times.

Scene 25.
ESTABLISH SHOT of Jane Jungden
Cooper 01.03.40

Jane Jungden, Manager of Industrial
Engineering explains . . .

Scene 26. CG:
Jane Jungden, Manager of
Industrial Engineering
Jungden on camera.
01:03:45:23 a
JUNGDEN

"I'm exclusively using the computerized system right now. I have over
the past 18 years focused mostly on stop watch,
continuous stop watch studies.
01.04.07

01:02:46:15 b "The technique that we are presently using
is a continuous time method using a data
collector, which records time elements and
the information is downloaded into a
computer, which then performs the calculations and produces various
reports."
01:03:07:24
Scene 27.

Cooper shop floor;

old assembly operation
02.20.21 a

NARRATOR (V.O.)

This study is important because the Company has been replacing older, "kick presses" with newer presses that are more efficient, better ergonomically for the operator, and safer. The study of this operation could impact other cell operations in the plant.

INTERCUT B-ROLL of
each element, as
observer follows with
data collector.

02.03.58 b

After talking with the operator, the

Industrial Engineer observes and times each

of the four elements in the operation.

02.05.09 c

First, the operator obtains, and assembles

two parts, the movement . . . and

assembly case . . . she then rewinds the

capillary and tapes the coil together . . .

02.08.00 d

she then fastens the case to the movement

with two screws . . . next, she loads the

02.08.37 e

movement and case into the new machine and

presses the lens into place and places

it into a container for the next operation.

INSERT B-Roll of
observer recording
times in various steps.

02.10.32 f

After many observations of the elements

of the procedure with the new press, the

02.24.58 g

results are downloaded from the data

collector to the computer.

Scene 28.

Jane Jungden at the
computer.

02:25:12 a

The specific times recorded for each

observation of each element are immediately

available . . .

INSERT SHOTS

B-Roll as Jane
downloads, and pulls
up information from
the study.

02.25.52b. . . and a quick recap of the elements

studied can be pulled up . . .

. . . followed by a detailed "Summary Report"

02.26.35 c

with all calculations available for

comparison with prior studies of the same

operation before the new press was installed.

Insert shot

02.21.08 d

02.21.53 out

music under

In this example, I expect to have a standard that is slightly lower than the one that we had before, which will give us all the benefits that I talked about before. We will get improved quality on parts, we will get a better ergonomic situation for the operator, safer, and for a slight decrease in cost

FADE TO BLACK

Scene 29.

MacGreggor Golf, action during
inspection and packaging operation.

CUTS of various operator moves.

06.10.27aAt MacGreggor Golf, in Albany Georgia, work

measurement has also long been a way of life
03.08.53 b
using several different techniques to

establish standards.

Scene 30.
ESTABLISH SHOT of Bill
Kilkenny, MacGreggor.
CG:
Bill KILKENNEY, Production
& Manufacturing Engineer

BILL KILKENNY
02:07:25 a

"The techniques we use here for work measurement at MacGreggor are, we use a
CG: pre-determined time system - MOST --, and
Predetermined we have a computerized version of that.
Time System the title of that is FAST. We use a little
stopwatch, but that would be strictly for
overall time checks and to look at process
times. Otherwise everything is analyzed
with motion analysis and predetermined time."

02:07.53

02:13:18:10 b "The typical procedure we'll use to take a study,
we'll go out on the floor and the
first thing we do is review the method with the operator
that we're going to do, and
make sure we both understand how it should be done."
B-roll next
page

Scene 30. (CONT.)
B-ROLL
03:01:31

B-Roll. BILL KILKENNY (V.O.)
03.04.45

"The operator will proceed with the
operation. I'll take notes on the methods --the motions -- the
techniques as we go
along. I'll take a few overall times just for checks. When the thing is
done, we'll come back to the office and analyze the data."
02:11:52:19 "The decision to conduct a time and motion study analysis
is usually made
between myself and a supervisor, or it's
something that could be brought up by an
operator. There are a couple of things that
will generate a requirement for a standard.

One would be new technique or new material.
The second would be changes that have taken place. For instance, the study we're going to look at, we've changed solvents that we use for cleaning, we've changed what we put on the head. We used to use a cloth sock, we now use a plastic bag. There are several little changes that we're going to look at and pick up.

02:12:35

Scene 31.

from time to time with Bill writing notes on his clipboard. Fast cuts on cue with action

NARRATOR (V.O.)

03.04.48 a

As the operator begins the procedure, Bill

Kilkenney makes notes. The operator lines up

03.03.23 b

the metal woods in sets . . .

03.03.51 c

03.05.12 d . . she wipes the necks . . . then the

03.06.14 e

03.07.26 shafts . . . she adds ID tape to the shafts,

03.21.59 g

wipes the grips . . . removes head covers,

03.23.40 h

03.25.02 inspects heads, wipes as necessary . . . then

03.26.02 j

puts heads in plastic covers. The operator

lays out the shipping box; selects clubs for

the

Scene 31. (CONT.)

03.27.02 k

boxes: completes packaging with stuffers;

03.27.27 l

03.13.48 m

staples the boxes. She then fills out forms;

03.14.07 n

and attaches package labels -- then places

the boxes on a pallet.

03.15.25 o

Scene 32.

Bill Kilkenney at his

computer.

B-Roll:

04.02.31 a

NARRATOR (V.O.)

Armed with his notes and observations, Bill

04.03.40 b

Kilkenney then compares what was seen on the floor with what's in the central computer, and makes appropriate changes and updates as needed.

04.04.15 c

After looking up the routing of the clubs studied, he checks the operation and code, and goes to his computerized standards

system -- FAST.

04:04:35 d

The database has 399 standard processes and 313 elements representing various operations.

04:05:02eHe checks the operation description of the study -- "clean, inspect, and pack". . . and

Scene 32. (CONT.)

reviews each step, shown by the appropriate code along with the index indicating degree of difficulty.

05:03.33 f

In reviewing the new study, he noted a number of changes in the method, and inserted each of the changes and determined that he needed to create a new standard.

05:27:45 g

After entering the new data, he printed a copy of both the old and new standards for comparison. He found that the new standard reflects an improved method by reducing processing time.

Scene 33 deleted

Scene 34

Bill Kilkenny, SYNC

music under

02:15:23 a

BILL KILKENNY

"The goal is to have an accurate method documentation, and to keep methods up to date, and the methods determine time, which keeps our cost and our standards in line. That's the continuing objective of the system we use. MOST and FAST is achieving this objective."

02:15:51

FADE TO BLACK

Scene 34b.

EXTERIOR sign of Cramerton

Automotive Products

12015.07 b

NARRATOR (V.O.)

At Cramerton Automotive, in Cramerton, North

Carolina -- manufacturers of automotive

11.01.04 c

upholstery, and headliner fabrics --many

Work Measurement techniques have been

employed throughout their operations.

CG:

Work Sampling

12.10.34dEmphasis has been on work sampling, where

records are made of what each worker is doing

at that instant, usually at random intervals

over a period of days and sometimes weeks.

10.09.19 e

From this data, the percentage of time for

each activity is determined. The percentages

10.09.35 f

can be used to determine actual time spent on

various activities.

Scene 35.

Bruce Gowan, SYNC

Industrial Engineering Manager

Cramerton Automotive Products

09:03:02:04

BRUCE GOWAN

"At Cramerton we have used work sampling the most often. Due to the nature of the work here, we very often have long-cycle, low repeat job functions, so that conventional time study is very time consuming to gather enough data.

Scene 35. (CONT.)

But, we do have multiple operators performing the same functions, so by using a work sampling, where we periodically sample what each employee is doing on a set schedule, we can build a database of information that gives us a good measurement of the task performed without being as involved or time consuming as traditional time study is."

09:03:37:03

Scene 36. a

Bruce Gowan:09:07:01:09

INSERT B-Roll

12.10.25 in

12.11.04 out

BRUCE GOWAN (SYNC & V.O.)

"Communication with employees is always the first step in doing any work measurement here at Cramerton. We generally organize the department we're going to measure; get all the employees, supervisors and maintenance

people together, and we have a meeting and discuss exactly what's going to happen over the next several weeks, before we ever set foot in the department to do the actual studies. That brings them more at ease. It

also gives us some valuable input of ideas from, the employees where they have thought of things that make their jobs better, and they actually contribute substantially to the work measurement project."

09:07:32:16 out

09:17:47:01 "We have to remember that there is a 20 foot rule of employee operations, the person who is within 20 feet of that job every day understands it better than anyone else. No

Cut away matter how much work sampling or time study we perform on a function, we never know it 12.08.35 in as intimately or as well as someone who 12.08.53 out stays with that machine eight hours a day, six days a week."

09:18:05:26 out

Scene 37.

ACTION on shop floor

of Sampling Study back timed from the start of scene 39.

NARRATOR (V.O.)

An example of a current Work Sampling Study,
in which an Industrial Engineer observes and
makes notes, illustrates how the process

works. . .

scene 38 deleted

Scene 39.

INSERT ACTION shots on
the shop floor, as indicated.
Shots from Tapes 11 & 12 have
various shots of the steps.

11.14.01a. . . the operator is observed through all
the steps to be performed. She first labels

the roll,

11.14.30 b

then she processes the fabric --

11.16.31 c

11.16.50 checks the shade -- prepares a piece ticket -

11.18.32 e

notches the fabric -- continues processing

11.18.57 f

the fabric, and inspects for defects. Then,

11.20.00 g

11.20.23 h

she cuts swatches -- inserts her piece ticket

11.20.40 i

and tapes the end of the roll. She starts a

11.20.55 j

new roll, processes and inspects and marks

11.27.16 k

any minor defects. When she finds a major

defect --

11:28:46 l

-- she cuts it from the roll, and prepares

11.30.25 m

a lap seam for that roll. Again she inserts

11.06.12 n

the piece ticket, tapes the end of the roll

Scene 38. (CONT.)

and moves on to the next roll. All steps are

observed and recorded by the Industrial

Engineer or IE Technician.

Scene 39.

Bruce Gowan at the computer,

illustrating use of

Work Sampling. Screens of

"FAST Work Measurement
and Time Study System."

The data from this and other observations
10.09.00 o
of operators performing the same job are

12.12.21 down-loaded from Data Collectors to the
10.10.09 computer to get a summary and a look at
the file that has been collected.

10.05.50 This process allows for analysis of what
was observed

Scene 39. (CONT.)

by charting all elements.

12.07.10 s

And, in the case we have seen, some

concern for the time necessary for operators

to complete writing tickets suggests that

this part of the job may need to be

revised.

Scene 40.

Bruce Gowan, SYNC

09:21:25:10 a

music under BRUCE GOWAN

"Using a predetermined time system, we can lay out the steps of the
operation, the

individual hand movements, the finger
movements, the distances of reaches, the amount of weight moved, the
distance

traveled, and the sequence of events that is
visible for the operator to see, and then the predetermined times
which have been built on a statistical sampling are applied
to those predetermined motions. We get a

cut away chance to analyze the method, look for
12.08.41 excess motions and eliminate those in the

model, and we can build a time that is
visible for the employee and for us to
use in making methods improvements."

09:21:59:19

09:20:21:07 b

"So, work sampling gives us a snapshot look
it's almost like doing time-lapse
photography to watch a flower bloom."

09.20.40

FADE TO BLACK

Scene 41.

EXTERIOR Kohler Company

16.23.37 a

NARRATOR (V.O.)

At the Kohler Company in Kohler, Wisconsin,

and throughout their many divisions with

16.24.20 b

diverse product lines, the Kohler Computer

Aided Time Standards, or "K-CATS" has been a

15.17.58 c

successful work measurement program.

Scene 42.

ESTABLISHING shot of Ken Pipping

CG: Ken Pipping, Project Leader;

K-CATS.

NARRATOR (V.O.)

13.03.40 With nearly a quarter of a century of

experience working with Work Measurement,

Ken Pipping began the K-CATS project at

Kohler, almost a decade ago.

Scene 43.

Ken Pipping, SYNC.

13:03:53 a

KEN PIPPING

"First of all, let me start by saying that Kohler is in a transition. For many years we practiced stopwatch techniques and those techniques are still practiced to some extent today. However, times have changed, and that technique, particularly from our point of view, and so, some years ago we decided to change to a predetermined time system."

13:04:23 out

13:07:57.24 b The techniques we use are determined by a number of factors. The amount and the level of production for that particular task

or activity; the amount of variables in the study for the task or activity. How we're going to pay for the activity so, worker compensation and some other factors are considered, before we decide on the particular techniques we are going to use.

Scene 43. (CONT.)

The tool we apply those techniques with is always the MTM4M software product. So what we evaluate first and then determine if we are going to the 4M analyzing system, or the UAS analyzing system or its standard data product -- or are we going to use a combination of those things, or are we going to use other things."
13:09:54:09 out

KEN PIPPING

13:06:03:13 c

"We use work measurement techniques here at Kohler in many different areas, both in the indirect area and the direct labor area. Indirect labor is something that is very new to Kohler Company, and it's also very new to most industry. I basically call that area, support labor. Support labor includes such things as maintenance labor, sanitation labor, store room labor, and things of that sort."
13.06.39 out

Scene 44.

B-Roll of study in Kohler Packaging operation.

NARRATOR (V.O.)

15.08.57

An example of work measurement at Kohler is being conducted within the pottery division on a packaging operation. A final product -- a vessel -- is packaged for shipment to customers. This study confirmed the cost-effectiveness of the utilization of

CG:

a pre-determined time analyzing system.
Pre-Determined

Scene 45.

B-Roll footage of the
steps in the packaging
area study.

Start

15.01.18 a

Studies like this normally begin with a

discussion between the technician, the

operator, and supervisor to create full

understanding of the project --and to gather

15.01.58 b

all the information pertaining to the job.

This includes tool numbers, part numbers,

and data necessary to accurately review the

tasks and elements involved in performing the

job.

15.13.15 Then, as the technician follows the action
with the camcorder, the operator proceeds

with his tasks -- first reaching for the

shipping carton --then folding and gluing the

bottom -- followed by putting in the bottom

liner, ..next, he adds the instruction sheet,

template, and linkage hardware, puts in a top

liner,--- gets the vessel,---

Scene 45. (CONT.)

scans the bar code -- adds carton label --

glues the carton, --and when finished, pushes

15.14.37 out

it through the compression chamber.

15.17.46 The operator then empties the line of

completed cartons onto pallets, and when

15.18.05 out

finished, returns to resume his packaging

tasks.

Scene 46.

B-Roll of sequence

where distance is measured

15.04.29 a

During the study, it was

observed that the operator had to go quite

a distance to obtain carton inserts needed

15.20.03 b

for the job. This distance was measured,

15.21.54 c

recorded, and an alternative location was

discussed with the supervisor and the

operator.

Scene 47.

Group meeting B-Roll;

use any SYNC sound that

may be suitable.

15:24:07:17

The technician meets with the operator and

the supervisor, when all the data from the

study has been gathered, to be sure the

operator understands the suggested new

procedure, before a new rate is established.

Copies are distributed and discussed to

be certain all parties agree with them.

All agreed in this case -- including the

relocation of carton liners to make the

process more efficient.

Scene 48.

Analyst at the

Computer;

Prox. 16:10:51 a

music under

With concurrence from the operator and the

supervisor, the analyst enters the results

in the database. First, the videotape is reviewed to be certain that each element studied matches the notes taken from the actual performance on the job.

Scene 48. (CONT.)
16.14.58 b

In entering the results of the study, the Analyst utilizes MTM 4M to set up an operations standard.

Element Master
screen.
16.18.06 c

The analyst creates element codes with descriptions for the elements, adds data from the predetermined time system, and creates the final standard.

Scene 49.
15.20.22

In the case we have seen, the new standard includes relocation of liners to make the operator's job more efficient.

FADE TO BLACK- music out

Scene 50.
deleted

Scene 51.
deleted

Scene 52.
REPRESENTATIVE CUTS from
each of the Case Studies,
action on the shop floors.

CG: Bold text
on cue. Work Measurement -- whether **time study**
02.03.32 a
-- **motion analysis** -- or **work sampling**,
03.15.36 b
has served these and many other

manufacturing companies well. In fact,
11.08.11 c
standards derived from Work Measurement have
been invaluable in many important areas, such

as:

Scene 53.
GRAPHIC, TYPE BUILD-UP
over suitable background;
CG:CAPS per voice:

Standard Costing of products or services,

Budgeting for expenses -

Planning

Capital Expenditures

-- establishing

Manpower Requirements -- Improving

Space Utilization --

Scene 53. (CONT.)
(Complete Build)
-- **Capacity Planning** --

Master Scheduling --

Cost Estimating -

Methods Evaluation , And

Process Improvement !

Scene 54.
Jane Jungden on camera.

JANE JUNGDEN

01.20.11 a
Work Measurement is at the
bottom of just about everyone's data -- be
that finance, sales, marketing, production,
01.20.34 out and inventory control.

It's a requirement for just
01.21.01b about any change, and continuous improvement
is the by-word in the future, and a quick accurate work measurement
is the best way to
decide if an improvement is valuable or not."
01:21:27 out

Scene 55.

15.19.10 a

Important as work measurement may be, it

hasn't always been received wholeheartedly.

Mostly, experts feel that workers tend to be

reluctant about people looking over their

15.19.30 out

shoulders as they work, and there has been a

03.18.53 b

lack of understanding of the purposes of work

measurement at all levels -- from management

03.19.21 out

to workers.

Scene 56.

Donovan Young (SYNC)

DONOVAN YOUNG

08:10:15:02

"I don't think you have much trouble

convincing management that there should be

work study, but you have the intrusion aspect, that causes reluctance

on the part

of workers to be observed closely, and that's human nature, and I

think that's

what you have to address. You have to be

the kind of management that reduces fear of

bad consequences and also makes workers more

comfortable, and treats them with dignity and measures them in a way

that does not

offend their dignity."

08:10:55:07

Scene 57.

Royal Dossett (SYNC)

01.17.50 a

There is still this whole

perception that work measurement is the way

to run your business, and that's not true.

Work measurement is simply a tool that's

needed to run your business, however you

choose to run it. But you still need good

values for things. People need to understand

that -- from management through workers

to the people that are actually doing it,

to the industrial engineers and time study

01.18.11 out technicians.

Royal Dossett

01.18.31b

Lack of knowledge of what work measurement is for is, the impediment to
successful work measurement programs.

01.18.39

Scene 58.

Bruce Gowan. (SYNC)

BRUCE GOWAN

09:17:02:28

"In most cases, the management and employees are intimately involved in any decision to study a job, so we try to get their buy-in for changes prior to going out on the floor.

We have been successful in that in most cases, getting the employees to review the

elemental breakdowns in descriptions, giving it a chance to see what we are doing every

step of the way, helps ensure their buy-in.

We get some resistance to change, but again

by involving them in the decision from day-

one, we have been able to minimize that fear

both from management and employees. Very often, if they get the

chance to give input

they'll come up with changes and improvements through their intimate

knowledge of the operation that we may have

missed."

09:17:47:01

Scene 59.

Ken Pipping, SYNC.

KEN PIPPING

14:05:51:01"Obviously, when an industrial engineer or

someone from the outside is out on the shop

floor and the employee doesn't know why they

are there, they will draw their own conclusions and opinions, and

many times that spreads through the shop floor. So, we

tried to alleviate that by these informational meetings, and I think

they went a long way."

14:06:14:19

Scene 60.

MONTAGE of action on

the floor from each

case study.

Music under NARRATOR (V.O.)

03.23.22 Most problems companies face with regard to

work measurement can be solved through

employee and management education and

training, and sharing an

03.25.37

understanding of the purposes and results of

work measurement studies. (PAUSE) So --

what are manufacturers missing if they're not
using effective work measurement methods?

Scene 61.

ROYAL DOSSETT

01.10.58 to 01.11.06 a

Without such good time values we can't schedule people, we can't
balance work for productivity, we can't come up with standard costs for
products.

01.11.18 to 01.11.27 b

We need work measurement, we need to develop good time values for how
long it takes people to do a job.

02:17:25:15 BILL KILKENNY

"I'm always very positive and a supporter of
work measurement, and a big believer in it,
I think we'll continue to use it here. The
results have been good, the multiple uses of
it, costing, routings, incentive payment, MRP II system, manpower
requirements, equipment -- I really don't see how you can
run a manufacturing operation without some
form of work measurement."

02:17:53:05

Scene 61. (CONT.)

14:13:00:17 KEN PIPPING

"Work measurement standards are an integral part of running a
business. I can't imagine
running any business effectively without
good engineering work standards. It just
doesn't make any sense."

14:13:19:12

10:02:37:06 e

BRUCE GOWAN

"There is an old saying in IE that, if you
can't measure it, you can't understand it,
and understanding is the first step to improving anything,
and work measurement
especially. For anyone outside the industry
looking at adding work measurement or even
in the industry looking to improve their
product flow, a good work measurement system, starting with employee
involvement,
building the jobs, looking for value-added
content, can still contribute a lot to the
bottom line of any operation."

10.03.14

Scene 62.CG: (MUSIC: BUILDING UP THRU CREDITS
Manufacturing Insights

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wishes to thank the following organizations for their
assistance in the production of this program:

Cooper Instrument Corporation

Cramerton Automotive Products

Georgia Tech

Henry Ford Museum

Kohler

MacGregor Golf

MTM Association

Royal J Dossett Corporation

Produced by

Society of Manufacturing Engineers

Executive Producer

Karen Wilhelm

Producer/Director

Steven Bollinger

Writer

Clark Pardee

Graphics

Jerome Cook

Camera

Scott Chalmers