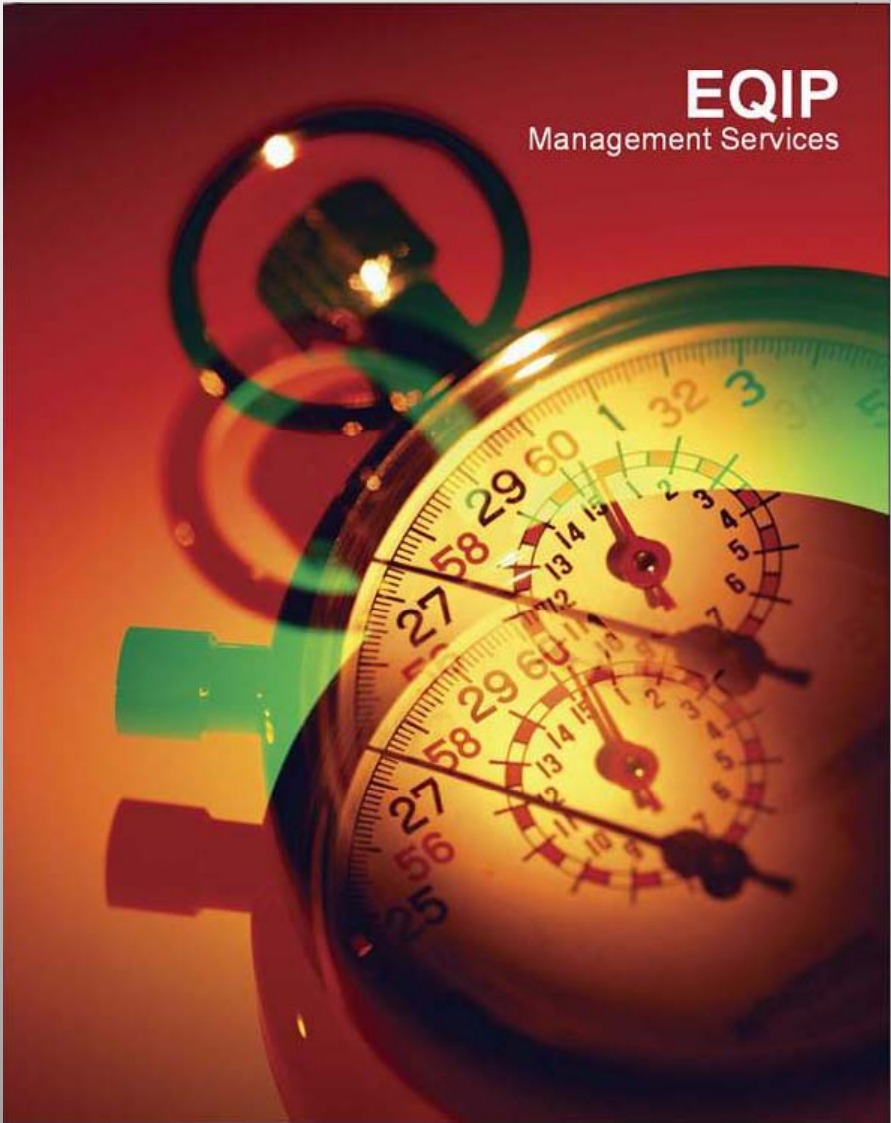





Using Work Study to maximise efficiency

Dave Henrys MMS (dip)
EQIP
Management Services





Management Services

-  **Established : April 2006**
-  **25 years in Local Government**
-  **Management Services**
-  **Contract Support under CCT**
-  **Business Support under Best Value**
-  **Internal Consultant**



Association for Public Service Excellence

-  **APSE Performance Networks - Benchmarking**
-  **Associate Consultant with APSE's BVC**

Management Services

“The practice of management services involves the use of a range of skills, methodologies and techniques. It also involves a particular attitude and approach to problems, opportunities and potential for change.”

Institute of Management Services (www.ims-productivity.com)



Management Services

The range is included in the Management Services Body of Knowledge, all aimed towards “PRODUCTIVITY & QUALITY DEVELOPMENT” & “Continuous Performance Improvement”

Work Study

 inc. Time Study, Rating, Sampling, Estimating, Analysis of Work

 In the 1980’s most local Authorities had a Management Services or Work Study Unit



Work Study

“Work Study is the systematic study of an operation or process to ensure the best possible use of the human and material resources available. The prime aim is to improve productivity”

British Standards Institution approved definition B.S. 3138: 1959



Work Study

“Work Study is as old as industry itself. The first man who succeeded in simplifying his job by the use of his reason can be considered its unconscious founder”

Russell Mackenzie Currie (1902-1967)



Time Study

- ✍ **the direct observation of work while it is being carried out**
- ✍ **used to set targets or compare performance**
- ✍ **was the driver behind bonus incentive schemes**
- ✍ **target times set at “*standard performance*”**



Standard Performance

“the optimum rate of output that can be achieved by a qualified worker as an average for the working day or shift, due allowance being made for the necessary time required for rest”

Russell Mackenzie Currie (1902-1967)



Bonus Schemes

- ✍ **Standard times set for individual jobs**
- ✍ **Standard Minute Values (SMV)**
- ✍ **Allowance made for travel, lost time etc.**
- ✍ **Refuse collection and street cleansing routes based on SMV's**
- ✍ **Standard performance usually 33.3%**
- ✍ **Maximum bonus set at 50% or 60% of basic pay**

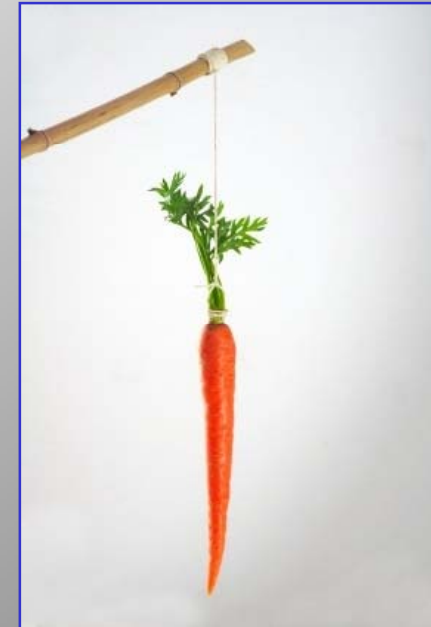


Demise of Bonus Schemes in Local Government

- ✍ **Inadequate work study resource to keep up with developing work methods and new equipment**
- ✍ **“The pen is mightier than the sword !!”**
- ✍ **Compulsory Competitive Tendering**
- ✍ **Integrated schemes**
- ✍ **Single status agreements**

Benefits lost

- ✍ **Reduced incentive to work harder**
- ✍ **Productivity checks**
- ✍ **Reduced output**
- ✍ **Target setting**
- ✍ **Route planning**
- ✍ **Loss of efficiency / productivity expertise**



The Comeback

- ✍ **Best Value**
- ✍ **Efficiency savings**
- ✍ **New equipment**
- ✍ **Improved working methods**
- ✍ **New work schemes**
 - ✍ e.g. Kerbside Recycling



Recent APSE Projects

 **Productivity checks**

 **Solve disputes**

 **Efficiency studies**

 **UK-wide**

 **Southern City Council**

 **Midlands Metropolitan**

 **Welsh Unitary**

 **Scottish District**

 **Northern Ireland**



Example 1

- ✍ **Domestic Refuse Collection**
- ✍ **Time & motion studies**
- ✍ **Test performance levels in operation**
- ✍ **Provide indication of numbers of properties that should be being collected**
- ✍ **Can savings be made?**



The Studies

- ✍ **Rated activity sampling**
- ✍ **Two routes / Two weeks**
- ✍ **Provides a “snapshot” of the operation**
- ✍ **Analysis separates productive / non-productive time**
- ✍ **Different methods employed during studies**



The Studies

- ✍ **Driver + 4 loaders**
- ✍ **Normally 2 loaders pull out ahead & 2 load to vehicle with driver getting in and out.**
- ✍ **Very high ratings observed on week 1**
- ✍ **2 days on week one and 1 day on week two - all worked with vehicle**
- ✍ **Agency loaders used to cover leave and sickness absence**



Performance

Week One – Team 1

Driver	(M-F)	105.46
Loader 1 (agency)	(M-F)	101.67
Loader 2	(M-W)	95.36
Loader 3	(M-F)	97.42
Loader 4	(M-F)	98.17
Loader 5 (agency)	(Th-F)	107.41
<i>Whole Crew Average</i>		101.07

Performance

Week Two – Team 9

Driver	(M-F)	100.83
Loader 1	(Tu-F)	96.88
Loader 2	(M-Tu,Th-F)	104.53
Loader 3	(M-F)	98.95
Loader 4	(Tu-F)	102.72
Loader 5 (agency)	(Mon)	105.13
Loader 6 (agency)	(Mon)	96.29
Loader 7 (agency)	(Weds)	99.68
<i>Whole Crew Average</i>		100.74

Performance







	Team 1	Team 9
Monday	99.60	101.13
Tuesday	97.70	101.36
Wednesday	109.76	98.57
Thursday	108.68	101.11
Friday	106.80	103.92

Productive

- ✍ **Vehicle checks / fuel up**
- ✍ **Manoeuvre vehicle on site (rated standard)**
- ✍ **Load bags to back of vehicle**
- ✍ **Pull bags out to kerbside**
- ✍ **Walk (run!) between properties**
- ✍ **Get bags from vehicle**
- ✍ **Put new bags out for householder**
- ✍ **Out of sight (productive elements - not rated)**



Non-Productive

-  **Drive / travel between sites**
-  **Travel to & from tip**
-  **Wait (to load, for vehicle, at tip)**
-  **Break (inc. personal time)**
-  **Talk (crew, public, supervision, consultant)**
-  **Out of sight (non-productive elements)**



Productivity

	% Prod. Time	% Non-prod. Time
Week One – Team 1	72.46	27.54
Week Two – Team 9	69.71	30.29

Productivity

	% Prod. Time	% Non-prod. Time
Week One – Team 1 (Mon–Tue)	61.50	38.50
Week One – Team 1 (Wed–Fri)	85.17	14.83
Week One – Team 1 (All Week)	72.46	27.54

	% Prod. Time	% Non-prod. Time
Week Two – Team 9 (excl.Weds)	70.89	29.11
Week Two – Team 9 (Weds)	66.14	33.86
Week Two – Team 9 (All Week)	69.71	30.29

Task & Finish

	Week One – Team 1	Week Two – Team 9
Monday	3:03 p.m.	1:00 p.m.
Tuesday	2:39 p.m.	11:48 a.m.
Wednesday	11:28 a.m.	1:56 p.m.
Thursday	10:42 a.m.	12:38 p.m.
Friday	11:01 a.m.	10:28 a.m.

Extrapolation

	<u>Properties</u>	<u>Prod Mins</u>	<u>Props / Prod Min</u>	<u>Ave Rating</u>	<u>Adj. Props / Min</u>	<u>% Non-Prod</u>		
Team 1								
Mon	2,109	1,631	1.29	96.90	1.33	38.03		
Tues	1,967	1,589	1.24	97.70	1.27	38.98		
Weds	2,183	1,275	1.71	109.76	1.56	18.06		
Thurs	2,051	1,260	1.63	108.68	1.50	14.40		
Fri	1,951	1,312	1.49	106.60	1.39	11.89		
	10,261	7,067	1.45	101.07	1.44	27.54	11,100	mins per week
							72.46	prod %
							8,043.06	Ave prod min/wk
							11,555	Ave props/wk

	<u>Properties</u>	<u>Prod Mins</u>	<u>Props / Prod Min</u>	<u>Ave Rating</u>	<u>Adj. Props / Min</u>	<u>% Non-Prod</u>		
Team 9								
Mon	2,176	1,428	1.52	101.13	1.51	32.39		
Tues	2,220	1,316	1.69	101.36	1.66	25.52		
Weds	2,067	1,580	1.31	98.57	1.33	33.86		
Thurs	2,006	1,319	1.52	101.11	1.50	34.35		
Fri	1,764	1,070	1.65	103.92	1.59	20.92		
	10,233	6,713	1.52	100.74	1.51	30.29	11,100	mins per week
							69.71	prod %
							7,737.81	Ave prod min/wk
							11,709	Ave props/wk

Potential Savings

Example 1:

Average of 1,385 extra properties per crew per week
x 9 crews => 12,465 properties

EQUIVALENT TO ONE CREW'S WEEKLY WORKLOAD

Potential Savings

Example 2: Team 1 - Monday

4 loaders - 524 minutes each => 2,096 minutes total
Productive time = 55.5% => 1,163 minutes

Putting bags out - 235 mins @ 94.60 => 222 minutes
+ 170 o/s
392 minutes

Therefore:-

Putting bags out = $392 / 1,163 \times 100$ => 33.7%

EQUIVALENT TO 1.348 LOADERS



Example 2

✍ **10 hour days start of week**

✍ **6 hour days end of week**

✍ **Findings:-**








✍ **Crew working at standard performance or just below (100/97)**

✍ **Productive time was just 50% of working week**








Productivity

Study Analysis

 Productive Work	50%
 Travel to Site	9%
 Wait to Load	7%
 Drive to Tip	16%
 Wait at Tip	8%
 Ineffective Time	1%
 Personal Time	9%

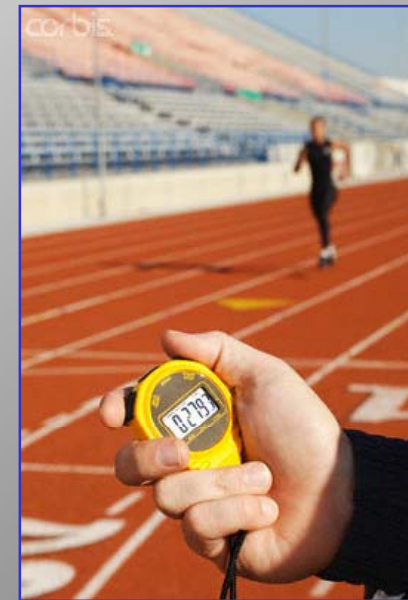
Productivity

Problems Highlighted :-

-  **All vehicles arrived at tip at same time**
-  **Tip located some distance away**
-  **Gantry loading led to waiting time
(worsened when operatives are inexperienced)**
-  **No compaction of plastics**
-  **Low participation (46%)**

Work Study Potential

- ✍ **Domestic waste reducing / kerbside recycling increasing. Check balance of workloads and routes.**
- ✍ **Establish spare capacity**
- ✍ **Productivity / performance checks**
- ✍ **Reduce ineffective time**



Other Areas

- ✍ **Recycling - crew sizes**
- ✍ **Seasonal working**
- ✍ **Street cleansing routes**
- ✍ **Manpower planning**
- ✍ **Grasscutting rounds**
- ✍ **Gully emptying routes**
- ✍ **Bonus scheme checks**
- ✍ **SINGLE STATUS**



Thank You



Dave Henrys
EQIP Management Services
telephone: 01352 731275 / 07946 568892
E-mail: mail@equip.co.uk
Web: www.equip.co.uk



Association for Public Service Excellence
2nd floor Washbrook House, Lancastrian Office Centre,
Talbot Road, Old Trafford, Manchester M32 0FP.
telephone: 0161 772 1810
fax: 0161 772 1811
web:www.apse.org.uk