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ORGANISATIONAL EFFECTIVENESS
IN MILITARY ORGANISATIONS

by

Major R.C. Furry

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1st PSYCHOLOGICAL
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16. Abstract Australian Army Officers in the ranks of Lieutenant Colonel and Major completed questionnaires about familiarity with management interventions and select management techniques. Responses were compared with perceptions of effectiveness, background and organisational factors. Data were analysed using a linear structural model (LISREL). Main results were a positive relationship between a set of 11 management interventions and perceived effectiveness and a stronger correlation between familiarity with management interventions and a select list of management techniques. In addition, a moderate relationship was found between job satisfaction and perceived effectiveness. Results are discussed in the context of implementation of a proposed model of effectiveness improvement. <i>Keywords:</i>			

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Major R.C Furry
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Abstract

Australian Army Officers in the ranks of Lieutenant Colonel and Major completed questionnaires about familiarity with management interventions and select management techniques. Responses were compared with perceptions of effectiveness, background and organisational factors. Data were analysed using a linear structural model (LISREL). Main results were a positive relationship between a set of 11 management interventions and perceived effectiveness and a stronger correlation between familiarity with management interventions and a select list of management techniques. In addition, a moderate relationship was found between job satisfaction and perceived effectiveness. Results are discussed in the context of implementation of a proposed model of effectiveness improvement.

The findings and views expressed in this report are the result of the author's research studies and are not to be taken as the official opinion of the Department of Defence (Army Office).

In the 1970s there was a sudden awareness in the United States (U.S.) that there had been a rapid decrease in productivity as represented by the Bureau of Labor statistics. These average yearly changes in U.S. productivity growth per year are quoted in Tuttle (1983) as follows: for the period 1947-1967 growth was 3.2% (average). Subsequently the figure actually indicated negative growth: for the individual years 1976 - 0.2%; 1979 - 0.4%; 1980 - 0.4%.

Business Week in its July 24, 1978 issue reported that productivity growth was only two-thirds of what it had been in the 1960s. These sorts of figures "caused many executives and administrators to conclude that productivity improvement had become urgent not just desirable." (p.146)

Judson (1982) in a study of 236 top level executives representing a cross section of 195 U.S. industrial companies found that 32% of these companies experienced a decline in productivity and 25% of the respondents did not even know what their company's productivity performance had been. The conclusion reached was that management ineffectiveness was by far the single greatest cause of declining productivity in the U.S. In looking at any of these productivity figures it is worth noting, as in Alluisi and Meigs (1983), that there is no measure of national productivity that includes both the private and Government sectors. U.S. Government response to the problem of declining productivity was legislation in the form of Public Law 94-135 of 1975 aimed at stimulating efforts to accurately measure productivity improvement efforts and to encourage those efforts. For military organisations the law was followed by a Defence instruction which in turn was followed by instructions for each military service.

The Problem of Definition

Researchers in the area have always been hampered by the problem of determining operational definitions for productivity, effectiveness and efficiency and the relationship between the three. The problem will never be completely resolved because the definitions change according to the researcher's perspective. The economist, engineer, accountant, manager and psychologist all have different perspectives and thus different definitions (Tuttle, 1981). The current study will adopt the following definitions:

- a. "Productivity", as distinct from production, is defined as workload and goal accomplishment and incorporates both effectiveness and efficiency. In the military context, peacetime focus is on efficiency - in wartime, effectiveness is all that matters.
- b. "Effectiveness" is the degree to which an organisation achieves its goals (Price, 1977), and
- c. "Efficiency" is a ratio that reflects the cost incurred for that performance.

In simple terms effectiveness is "doing the right things", efficiency is "doing things right" (Tuttle, 1983, p. 483) and productivity has elements of both. In the military context effectiveness is generally a more appropriate term than productivity because of the confusion between production and the term productivity.

The Question of Measurement

For measurement purposes, Pennings and Goodman (1977) define organisational effectiveness in terms of constraints, goals and referents. "Organisations are effective if relevant constraints can be satisfied and if organisation results approximate or exceed a set of referents for multiple goals." "Constraints" appear in organisations as policy statements or decision rules that guide behaviour. Organisation "goals" represent desired end states specified by the dominant coalition. "Referents" are the standards against which constraints and goals are evaluated. They can be internal or external to the organisation and can be categorised as static or dynamic. It is highly unlikely that effectiveness can be evaluated with a single referent. For each constraint or goal, multiple referents may be assigned. Referents are generally called measurement indicators. As such, measurement indicators are a substitute for direct observation and have to be considered in cost-effectiveness terms.

Measureable general aspects of productivity (Guzzo and Bondy, 1983) are output (quantity and quality, cost effectiveness), withdrawal (turnover, absenteeism), and disruption (accidents, strikes). Campbell (1977) proposed a more detailed set of organisational effectiveness indices. Tuttle and Weaver (1986) lists three measureable aspects (and efficiency) with the emphasis on detailed measurement (see Figure 1). Other authors would use structural measures of organisational effectiveness including the degree of organisational innovation (Mohr in Rowe and Boise, 1973) and staff mobility and career development (Kirkhardt in Marini, 1971). Criteria change as an organisation changes and as the environmental contexts in which organisations exist are themselves changing - "The casual texture of the environment" (Emery and Trist, 1969). In the military context there are also factors such as Government attitudes to military spending and public attitudes towards military service. These are factors which are beyond the control of the organisation, but which it must respond to as part of the turbulent environment in which it operates.

The task of translating a goal into a set of measurement indicators is generally quite complex. The best detailed description of the process with examples is to be found in Tuttle (1981) and Somers, Locke and Tuttle (1985). Hurst (in Tuttle, 1981 p.33) has described the characteristics of good productivity measures as being controllable, congruent, measureable, unequivocal, reproducible, accurate and objective. In addition, measurement has to be appropriate to the level of analysis (individual, group and organisational).

Figure 1

Criterion Measures of Organisational Effectiveness

Guzzo and Bondy (1983)

<u>Output</u>	<u>Withdrawal</u>	<u>Disruptions</u>
Quantity/rate	Turnover	Accidents/safety
Quality/accuracy	Absenteeism	Strikes
Costs/efficiency	Tardiness	Slowdowns
Miscellaneous	Miscellaneous	Grievances
		Alcohol/drugs
		Miscellaneous

Campbell (1977)

Overall effectiveness	Job satisfaction
Productivity	Motivation
Efficiency	Morale
Profit	Control
Quality	Cohesion
Growth	Flexibility/adaptation
Absenteeism	Planning and goal setting
Turnover	Goal consensus
Accidents	Internalisation of organisational goals
Conflict	Role and norm congruence
	Interpersonal skills
	Managerial task skills
	Information management and communication
	Readiness
	Utilization of environment
	Evaluation of external entities
	Stability
	Value of human resources
	Participation and shared influence
	Training and development emphasis
	Achievement emphasis

Tuttle and Weaver (1986)

<u>Goals met</u>	<u>Results</u>
	Past results or goal
Quality	<u>Errors, reworks, successes, accomplishments, etc.</u> Exposures or attempts undertaken
Impact	<u>Effects on internal organisation or clients served</u> Past impacts or goals

The Degree of Success of Productivity Improvement Programmes

Guzzo, Jette and Katzell (1985) have summarised the detailed findings of Katzell, Bienstock and Faerstein (1977) and Guzzo and Bondy (1983) in analysing 207 productivity experiments for the period 1971-1981. To be included, experiments had to take place in "real" organisations and had to have employed at least one concrete measure of productivity as a dependent variable. Interventions were grouped under 11 rubrics: recruitment and selection; training and instruction; appraisal and feedback; goal setting; financial compensation; work redesign; supervisory methods; organisation structure; decision making techniques; and work schedules sociotechnical system redesign. The general finding was that 87% of the studies has at least one positive result. Guzzo, Jette and Katzell (1985) applied meta analysis to 98 of the 207 experiments that did not omit needed data.

The findings were:

- a. As a whole, the 98 experiments significantly improved a concrete aspect of productivity by nearly one-half a standard deviation (.44).
- b. The quantity and quality of worker output were generally more amenable to improvement than aspects of withdrawal (turnover/absenteeism).
- c. Programmes involving training, goal setting and sociotechnical systems design were the most powerful.
- d. Interventions involving changes in supervisory methods and work schedules had significantly positive effects on withdrawal.
- e. The only programme with a statistically significant effect on disruptions was goal setting, and
- f. The impact of interventions on Government (including military) was substantially greater than that in other types of organisation.

The general conclusion reached was that behavioural science techniques for increasing productivity are, on the whole, effective. When converted into cost benefit terminology (as has been done in many of the military studies) the productivity improvements are very dramatic indeed in terms of dollars saved.

Effectiveness in the Military Context

A significant number of the 207 productivity experiments analysed by Katzell et al (1977) and Guzzo and Bondy (1983) took place in military settings. The impression drawn from the individual abstracts is that military organisations are at the forefront in attempts to increase organisational effectiveness.

There is little doubt that military organisations can be contrasted with other organisations in their selection of goals and the way they approach those goals. Segal and Segal (1983) distinguish military organisations on the basis of intense socialisation, an emphasis on "belongingness" goals and a desire to maintain social solidarity in an increasingly individualistic social environment. Cohen and Turney (1978) and Turney and Cohen (1978) see the real distinction as being the rigid chain of command structure and the total immersion environment - "The permeation of the Army into all aspects of a soldier's life significantly extends the concept of the work environment beyond the confines of a single physical work facility and a 40 hour work week."

There is also a wide spread attitude in military organisation (Cahn and Nadel, 1978) that the military is a unique institution that has to do things in a particular way because military goals are different and civilian experience does not apply. This is in addition to a frequently recurring attitude that the military trains "leaders" and any emphasis on management training somehow detracts from the leadership role. This is misleading. At the Infantry platoon level the emphasis is obviously on leadership; for the logistician the emphasis is likely to be on management. The fact is that the military officer is a "problem solver" who is likely to spend much of his time dealing with problems of management and leadership.

The ultimate goal in military organisations is "effective war fighting", but to attain this goal may require many sub goals (operational and personnel management) at all levels of the organisation.

Effectiveness Improvement Efforts in Military Settings

Military organisations in some instances have borrowed techniques that have originated in civilian settings. A good example of this is the increased use of surveys to determine organisational functioning and quality of work life (Farkas, 1983; Jans, 1985). In one instance survey data have formed the basis of a service wide Organisational Effectiveness programme. This was the development and use of an organisational assessment procedure in the United States Air Force (Hendrix and Halverson, 1979). By 1984 the survey had been administered to almost 5000 military and civilian personnel in the United States Air Force (U.S.A.F.). The survey instrument used in the current study owes much of its format to the survey developed for the U.S.A.F.

Quality Circles (QCs) are another example of a technique used in civilian enterprises for many years before its eventual use in the U.S. Army (Schnieder, 1985) and the U.S. Navy (Atwater and Sander, 1984). QCs in the U.S. differ from QCs that had originated in Japan where the programmes give greater emphasis to statistical quality control and where employees often meet in their own time and usually receive a financial bonus for the performance of the organisation. In the U.S. QCs "boomed" to the point where they were a "fad" (Lawler and Mohrman, 1985). In 1982 the New York Stock Exchange estimated that 44% of all companies with more than 500 employees had QC programmes. While QCs have no decision making powers, managers in many cases felt pressured to accept all suggestions coming out of QCs. Even though most QCs go into a period of decline where social satisfaction takes over from group problem solving effectiveness, the fact remains that QC programmes can effectively collect the ideas of the individuals closest to the work (Lawler and Mohrman, 1985).

The use of QCs in defence organisations has had some very notable successes, though in most cases they have not been used with servicemen themselves, presumably because they are somehow seen as being inconsistent with principles of military discipline. The most quoted QC success (Bryant and Kearns, 1982) took place in the Norfolk Naval shipyard where QCs analysed problems using cause and effect analysis and value analysis techniques to bring about the net savings of \$215,000 in the first year. This represented a "benefit-cost" ratio of 4 to 1. Korb (1985) reported a QC at the Norfolk Air Rework facility saving \$300,000 a year with a single suggestion. Another at the Defence Logistics Agency saved \$250,000. In the Department of Defence, return on investment in training and the time devoted to problem solving through QCs had ranged from \$4 to \$26 for each dollar invested. Other benefits included such intangibles as better morale and improved communication between labour and management. Currently in the Australian Army there are QCs in several engineering workshops though they are not labeled as such.

Some one-off studies have collected data which could be incorporated into ongoing effectiveness programmes. One such study was the detailed investigation of the use of incentives in the U.S.A.F. which compared a range of non financially based outcomes and financially based outcomes (Pritchard, De Leo and Von Bergen, 1976). Another is the development in a military environment of the use of utility analysis (Hunter and Schmidt, 1983) to translate findings into economically meaningful terms (the standard deviation in performance in dollar terms). The technique appears to work with selection interventions but has not been proven in other areas and cannot always be replicated (Eaton, Wing and Mitchell, 1985).

Some military programmes have started out with a theoretical base borrowed from civilian experience and developed it into something uniquely military. Broedling, Githens and Riedel (1977) developed a management techniques inventory for the U.S. Navy based on an Organisation Development (OD) model. This same OD model provided the basis for the U.S. Army Organisation Effectiveness programme. In the period 1975-1985 this programme trained more than 1700 Organisational Effectiveness Staff Officers to act as "consultants" to general officers on the use of behavioural science techniques. The 16 week training programme (Hayden, 1985) provided grounding in basic systems models; organisational communications; information systems; management skills and assessment and organisational systems. The U.S. Army experience in this very ambitious undertaking and its demise have produced valuable lessons in the importance in this type of programme of maintaining support of the top people in the organisation and not allowing a programme to become too exclusive in its approach.

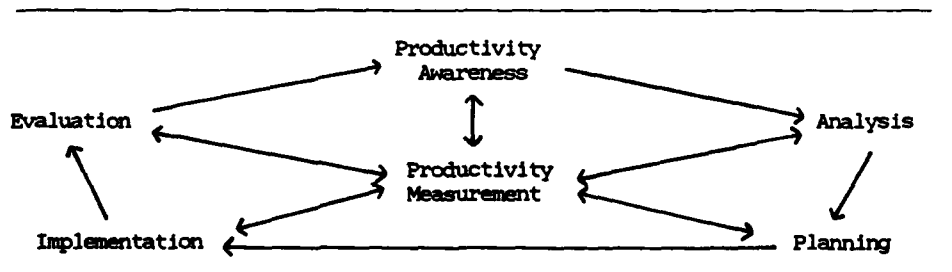
In looking at programmes attempted in military settings, and many of which were quite successful, the element missing appears to be coordination and cross fertilisation of experience and ideas even within individual military organisations.

Effectiveness Models

Tuttle (1983) presents a model (Figure 2) to represent the productivity management process. The process has five stages that are conceptually linked to productivity measurement.

Figure 2

Productivity Management Process



Somers, Locke and Tuttle (1985) concentrate on management basics including the need for organisation direction. They define direction in four sequential steps:

- a. Define philosophy and organisational purpose,
- b. Define Key Results Areas (KRAs) for each job,
- c. Define relevant performance indicators, and
- d. Define specific goals for each indicator.

The present study is intended to overlay the awareness and analysis steps of Tuttle's productivity management process in the Somers et al (1985) model modified to take account of priorities.

The Effect of Specific Management Techniques on Productivity.

Some studies (Guzzo and Bondy, 1983; Katzell et al, 1977) searched the literature for "experiments" dealing with the effect of interventions or techniques on productivity. Other studies have looked at the use of some single management technique in a variety of situations. For example, Kondrasuk (1981) analysed 185 studies of the effects of Management By Objectives (MBO). Broedling et al (1977) using an OD model, looked at the relationship between familiarity with leadership techniques and effectiveness in solving problems.

The current study investigates the relationship between familiarity with a group of management techniques, management interventions and perceived effectiveness. The hypothesis being tested is that there is a direct positive relationship between familiarity with management techniques, management interventions and perceived effectiveness. The management techniques chosen for the survey questionnaire were selected from literally hundreds of techniques based on the criteria that they were either (1) in wide use, (2) had made significant impact in recent years or (3) were representative of a wide area of techniques. Some techniques that met at least one of the criteria were deliberately left off the list. Operation Research was left off because the theory is too complex to summarise and Cost-benefit analysis was omitted because it is the attitude and approach that appears important rather than specific technique.

Aims

The aims of the present study were to:

- a. Test the primary hypothesis.
- b. Use a survey instrument to accomplish the awareness and assessment steps in Tuttle's productivity management process and the collection of information prerequisite to determining the organisation process.
- c. Analyse the effects of background factors on perceived effectiveness.
- d. Compare time spent in long term planning with the use of planning techniques.
- e. Compare the perceived utility of management interventions in this study with the findings of Guzzo et al (1985).
- f. Develop a proposal which would see the organisation's activities in terms of a performance orientation based on a process where the responsible officer at any level of the organisation could:
 - (1) Specify the KRAs for the unit or formation.

- (2) Specify the priorities for those KRAs.
- (3) Specify how performance is measured (measurement indicators).
- (4) Specify existing gap between performance and desired outcome, and
- (5) Specify the management interventions and techniques being used in a strategy to eliminate the gap.

Method

Access

The researcher is employed as an Army psychologist (Major) within the Australian Army Psychology Corps. This study was completed during two years of "long term schooling" sponsored by the Army. The research constitutes part of the requirement for the degree of Master of Arts in Applied Psychology. The researcher had no constraints as to the subject matter to be researched. Indeed, there was no requirement for the subject matter to be related to the Army at all.

Prior to the conduct of the study an outline of the proposed study was submitted to the Australian Army Deputy Chief of Personnel, together with a request to make use of Army resources (Annex B). Qualified approval was received (Annex C) and at a later time the Deputy Chief of Personnel provided an endorsing letter for the survey questionnaire (Annex D).

Subjects

The population comprised 1398 officers in rank of Major and 498 officers in the rank of Lieutenant Colonel, representing middle management in the Australian Army. The sample of 276 Majors and 100 Lieutenant Colonels (representing 20% of the officers in each of these ranks) was selected using computer generated lists of random numbers. The sample was considered to be random except for rank. Geographical influences were not seen as important because the average Army officer changes location about every two years.

Survey Instrument

Data collection was accomplished using a questionnaire which has a format and many questions similar to those used in the Organisational Assessment Package developed by Hendrix and Halverson for the U.S.A.F. The questionnaire (Annex A) contains 22 background information items and seven sections of attitudinal items. The attitudinal items are mostly seven-point Likert scales, although a few items contain a zero point for non-applicable responses.

The areas measured in the questionnaire are the job, one's supervisor, the organisational climate, satisfaction with a series of organisational factors, exposure to management interventions and specific management techniques, and perceived effectiveness of the respondent and those people he works with.

The questionnaire was designed primarily to allow a comparison between perceived effectiveness, background factors and stated exposure to management interventions and management techniques.

Procedure

Satisfactory access having been obtained, a survey questionnaire was constructed and pilot tested. Using a mailed questionnaire, data were collected on effectiveness (perceived), job satisfaction, organisational

climate and management style (supervision). In addition data were collected on managerial interventions, using Guzzo and Bondy (1983) categories, and exposure to specific management techniques selected from a wide range available for study. Data were also collected on background information such as sex, age, rank, corps and career intentions.

Great care was taken to preserve the anonymity of the respondents. In the pilot study interviewees were asked not to complete the questionnaire section on supervision. For the main study there was nothing on the questionnaire or answer sheet that would identify the respondent. Details of procedures used in the study are shown in Table 1.

Table 1

Details of the Procedure Used in the Current Study

<u>Action</u>	<u>Comment</u>
1. Choice of research topic	Military related subject
2. Literature search	Including three on-line
3. Development of research proposal	For Army and University
4. Request for use of Army resources	Subjects, mailing lists
5. Approval granted	Subject to constraints
6. Presentation of research proposal	To miniconference (approved)
7. Development of survey instrument	Some modification of previous questionnaire
8. Sample selected for pilot study	Stratified sample
9. Pilot study conducted	Using interviews
10. Survey instrument modified	Additions and deletions
11. Subjects selected for main study	Using random numbers
12. Request to Army for covering letter for questionnaire	De facto approval of survey instrument
13. Covering letter provided	
14. Questionnaire distributed	Army system, direct mail
15. Questionnaire responses compiled	
16. Analyses of data	Factor analysis, LISREL

Pilot Study

The survey instrument was pilot tested using interviews with 15 officers in the rank of Major and 5 officers in the rank of Lieutenant Colonel serving in the Melbourne area. These officers were nominated by the Staff Officer Military Secretary for Victoria using a stratified sample according to rank, corps and sex. The officers involved in the pilot test were excluded from the main study.

The pilot study resulted in several changes being made to the survey instrument. Among others, these included details in background information items, deletion of items considered to be confusing and the inclusion of additional items suggested by officers in the pilot study. The questionnaire used in the pilot study had some open-ended questions. Many of these developed into items in the final questionnaire.

Measures

While there is no doubt that concrete measures of effectiveness or productivity, such as those used by Guzzo and Bondy (1983) are preferable to attitudinal measures, concrete measures cannot be applied until they have been developed in a particular context. In the current study, attitudinal measures in the form of questionnaire Section 8 on perceived effectiveness have been used in the absence of concrete measures. In Section 8 of the questionnaire respondents are asked about such dimensions of effectiveness as quality,

quantity, use of resources, timeliness and time pressures, managerial interpersonal skills and overall performance.

Analysis

The major hypothesis is that there is a direct positive relationship between exposure to managerial interventions or techniques and perceived effectiveness. Perceived effectiveness as measured in Section 8 of the questionnaire is considered to be the dependent variable against which all other factors are compared or correlated.

The analysis will take the following sequence:

- a. Reliability computed for questionnaire items as an initial screening. Items to be deleted where they do not form part of a linear function or where more than 20% of respondents fail to answer an item.
- b. Recomputation of reliability for questionnaire sections after the deletion of items.
- c. Use of principal component factor analysis to group measured variables into homogeneous subsets to facilitate further analysis and to avoid having a variable for every questionnaire item. Any items loading less than .5 will be eliminated.
- d. Variables for items 6-15 and 7-5 to 7-7 will be computed using a "d" statistic. The d statistic has its origins in the work of Cohen (1969) and has been used extensively by Guzzo et al (1985). It is calculated using the following formula:

$$d = (\bar{X}_i - \bar{X}_g) / S$$

Where $\bar{X}_i$ and $\bar{X}_g$ are respectively, the means for individual and group responses on a given measure and S is the group standard deviation.

- e. Use of one way Multivariate Analysis of Variance and Co-variance (MANOVA) on selected background items and effectiveness factors. If the MANOVA does not produce significant differences among the items, data will be analysed as a single sample, and
- f. Use of maximum-likelihood analysis of structural equations using a computer programme called Linear Structural Relations (LISREL).

LISREL has become common in texts (Everitt and Dunn, 1983) and journal articles (Maruyama and McGarvey, 1980). With LISREL, unlike multiple regression analysis, the assumption of measurement without error is not necessary, as each of the observed measures contain a residual which contains both unique and error variance. Thus, measures no longer have to be pure indicators of theoretical variables since only the shared variance of measures within a dimension is extracted. In the current study an empirically testable model will be presented and then its parameters estimated using LISREL. The model is improved using the maximum modification index of the LISREL programme to add links. Links are eliminated when standard error negates relationships. Individual maximum-likelihood parameter estimates will be considered meaningful when coefficients are at least twice the standard error. The LISREL can be regarded as having a measurement model which relates observed variables to unobserved variables and a structural model which estimates the interrelations of the unobserved variables. The structural model expresses each theoretical dependent variable as a function of the other theoretical variables.

Results

The overall response rate for the mailed questionnaire was 67 % of the sample of officers. The total number of questionnaires returned was 253 or equivalent to 13 % of the population of 1896 Officers. This was after eliminating 11 answer sheets considered invalid because they did not contain enough data to use. Details of responses received in the main study are set out in Tables 2, 3 and 4.

Table 2

Number of Responses Received and Included in the Study and Response Rate, Classified by State or Territory (Military District)

<u>Location</u>	<u>Sample</u>	<u>Responses Received</u>	<u>Response Rate (per cent)</u>
Qld (1MD)	69	36	52.17
NSW (2MD)	59	51	86.44
Vic (3MD)	82	63	76.82
SA (4MD)	13	6	46.15
WA (5MD)	12	11	91.66
Tas (6MD)	2	2	100.00
NT (7MD)	5	2	40.00
ACT	134	79	58.95
Totals	376	250	

Table 3

Number of Responses Received and Included in the Study and Response Rate, Classified by Corps

<u>Corps</u>	<u>Sample</u>	<u>Responses Received</u>	<u>Response Rate (per cent)</u>
RAAC	20	16	80.00
RAA	32	23	71.87
RAE	38	23	60.52
RA Svy	11	7	63.63
RA Sigs	19	16	84.21
RA Inf	75	50	66.66
AA Avn	12	5	41.66
Aust Int	11	4	36.36
RACT	27	19	70.37
RAAMC	13	5	38.46
RAADC	11	5	45.45
RAAOC	50	45	90.00
RAEME	25	16	64.00
RAAEC	10	7	70.00
AALC	2	1	50.00
AA Psych	1	0	00.00
RACMP	8	6	75.00
AACC	4	2	50.00
AABC	2	1	50.00
RAANC	4	1	25.00
RAA Ch D	1	1	100.00
Totals	376	253	

Table 4

Number of Responses Received and Included in the Study and
Response Rate, Classified by Rank and Sex

	<u>Population</u>	<u>Sample</u>	<u>Responses Received</u>	<u>Response Rate (per cent)</u>
Lieutenant Colonel	498	100	73	73.00
Major	1398	276	180	65.21
Male	1828	357	242	67.78
Female	68	19	11	57.89

Overall, the responses received were representative on the basis of rank, sex and geographical location. They were also representative on the basis of corps with the exception of the smaller corps.

Management Interventions

The study has examined the effects of management interventions and management techniques on perceived effectiveness. Respondents were asked to indicate familiarity with 11 management interventions on a 1-7 Likert scale. "Appraisal and feedback" was the intervention respondents were most familiar with. "Financial compensation" was ranked at the bottom of the list (Table 5).

When respondents were asked which of the 11 interventions the organisation made best use of, the majority indicated "Training and instruction". This is not surprising considering the emphasis placed on this intervention in the Army. The qualitative ranking of interventions is seen in Table 6. "Financial compensation" was rated the intervention "not well used" by the organisation. "Appraisal and feedback" was the intervention that "received most attention" in the respondent's own job. The respondents had the "most experience" using "Training and instruction", which is consistent with the "best used" result. The rankings given "Financial compensation" and "Sociotechnical systems" are quite consistent for each of the questions. With "Financial compensation" this may relate to questions of constraint. With "Sociotechnical interventions" it may relate to definitions used. Complete details of responses are contained in Annex E.

Performance Measures

Respondents were asked to select from a restricted list, a single indicator of unit performance. Re-enlistment (re-engagements) rated the highest, reduction in rank was at the bottom of the list (Table 7). The purpose of the segment of the questionnaire was to determine whether respondents could rank order an extremely limited set of measures. The results indicate that respondents had no difficulty in performing this task.

Table 5
Respondents' Familiarity with Management Interventions

<u>Intervention</u>	<u>Mean</u>	<u>Standard Deviation(SD)</u>	<u>Ranking</u>
Appraisal and feedback	5.60	1.02	1
Goal setting	5.46	1.05	2
Training and instruction	5.41	1.37	3
Supervisory methods	5.30	1.15	4
Decision making methods	5.11	1.31	5
Work schedules	4.76	1.45	6
Organisation structure	4.39	1.62	7
Work redesign	4.34	1.67	8
Recruitment and selection	3.73	1.92	9
Sociotechnical interventions	3.66	1.94	10
Financial compensation	3.08	1.67	11

Table 6

Qualitative Ranking of Management Interventions

Interventions	<u>Rankings</u>			
	A	B	C	D
Training and instruction	1	10	4	1
Appraisal and feedback	2/3	3	1	2
Supervisory methods	2/3	9	3	3
Goal setting	4	5	2	4
Organisation structure	5	6	7	6
Recruitment and selection	6	8	9	8/9/10
Work redesign	7	4	10	8/9/10
Work schedules	8	11	5	8/9/10
Decision making	9	7	6	5
Sociotechnical interventions	10	2	8	7
Financial compensation	11	1	11	11

- A Intervention the organisation "makes the best use of"
- B Intervention "not well used" by the organisation.
- C Intervention that "receives most attention" in own job.
- D Intervention respondent "has most experience in using"

Table 7

"Best" Single Indicator of General Unit Performance

<u>Indicator</u>	<u>Frequency</u>	<u>Per cent</u>	<u>Ranking</u>
Re-enlistments	68	26.9	1
Posting application	67	26.5	2
Military and civil offences	32	12.6	3
Discharge application	30	11.9	4
Course passes	25	9.9	5
Absenteeism without leave	17	6.7	6
Warnings for discharge	5	2.0	7
Reductions in rank	0	0	8

Management Techniques

Respondents had been asked to express familiarity with a list of seven management techniques (Table 8) and to indicate on the questionnaire itself which of the seven techniques that they had "made some use of" (Table 9). The results go against any idea that Army "managers" do not keep up with current management practices. More than 63% of the respondents had made some use of Management by Objectives and almost half had made some use of some form of Network Analysis. More than a third had made some use of electronic spreadsheets, which is some indication of the growing role of computers.

Table 8

Familiarity with Management Techniques

	<u>Mean</u>	<u>SD</u>
Number of Management Techniques the Respondent:		
Had heard of	4.174	1.934
Had observed being used	2.885	1.724
Received Army sponsored training in	1.767	1.891
Received Non Army training in	.928	1.644
Had made some use of	2.560	1.653
Had made extensive use of	1.359	1.290
Had made daily use of	.810	1.050

Table 9

Management Techniques Respondents had "made some use of"

<u>Technique</u>	<u>Frequency</u>	<u>Per cent</u>
Network Analysis (PERT, CPM)	110	43.47
Management by objectives	161	63.63
Value analysis	62	24.50
Quality circles	64	24.29
Electronic spreadsheets	86	33.99
Organisation development	34	13.43
Divergent problem solving	42	16.60

Use of Computers

The role of computers was further seen when respondents were asked how often they made use of Army EDP facilities. Only 24% indicated "never" and 23% indicated "daily." The complete results are contained in Table 10.

Table 10

Frequency of Use of Army Computer Facilities

	<u>Frequency</u>	<u>Per cent</u>
Never	61	24.1
Rarely	41	16.2
Occasionally	57	22.5
Daily	59	23.3
Constantly	32	12.6

Relevance of Civilian Management Experience

It is sometimes assumed that Army "managers" see themselves as different from managers in the general community because their goals are quite different. When survey respondents were asked to rate on a 1-7 Likert scale the relevance of management experience and management techniques from the general community, they were seen as quite relevant (Figure 3). When asked to list the biggest single difference between tasks of civilian managers and Army "managers", more than a third choose profit motive and almost 5% saw no significant differences (Table 11).

Figure 3

Relevance of Management Experience and Techniques from the General Community

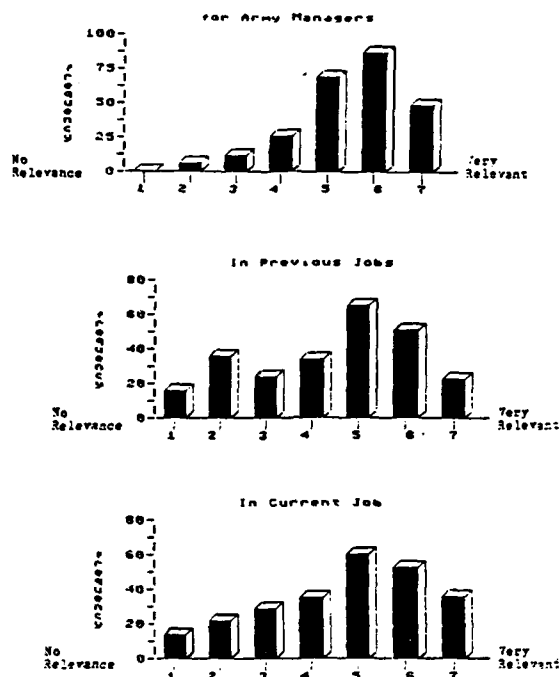


Table 11

Perceived Differences Between Army and Civilian Managers

	Frequency	Per cent
Profit	90	35.6
Not measurable	18	7.1
Personal welfare	10	4.0
Limited incentives	37	14.6
Leadership and teamwork	43	17.0
Efficient use of resources	14	5.5
Crisis management	8	3.2
No significant differences	12	4.7
Other	15	5.9

Personnel Retention

Of particular interest to military organisations in Australia in recent times is the question of personnel retention. When the respondents in the study (June, 1987) were asked about their career intentions, only about 50% indicated their intention to stay. A quite large (37.9) percentage of respondents said they were "open to offers". It is interesting to note for the larger corps that only 32% of Infantry Officers saw themselves as "open to offers" whereas 51% of Ordnance Corps Officers put themselves into that category. A crosstabulation of career intentions and probabilities for those intentions is contained in Table 12. A further comparison of career intentions by corps is contained in Annex F.

Table 12

Crosstabulation of Career Intentions and Probability

<u>Career Intentions</u>	<u>Probability</u>				<u>Row total</u>
	<u>Will</u>	<u>Likely</u>	<u>May</u>	<u>Undecided</u>	
Continue	50	70	4	4	128 (50.6%)
Retire	2	1	0	0	3 (1.2%)
Resign	14	11	1	0	26 (10.3%)
Open to offers	11	30	34	21	96 (37.9%)
Column Total	77	112	39	25	253
Percent	30.4	44.3	15.4	9.9	(100.0%)

Job Mobility

Of the officers in the study (average age 37, minimum age 29), almost half (47.6%) had made eight or more geographical moves in their career (almost 9% had made more than 12). Almost 42% had held more than 10 job appointments in their careers and close to half (46.3%) had been in their present job six months or less. This is not unexpected given the original assumption that officers change jobs on an average of every two years. Table 13 contains a crosstabulation of time in job by current posting location.

Table 13

Crosstabulation of Posting Location by Time in Present Job

Posting Location	<u>Time in present job</u>							<u>Row Total</u>
	<u>Less than 3 months</u>	<u>3-6</u>	<u>7-9</u>	<u>10-12</u>	<u>13-18</u>	<u>19-24</u>	<u>More than 2 yrs</u>	
1 MD (QLD)	-	17	2	1	13	1	3	37
2 MD (NSW)	1	18	2	1	15	2	11	50
3 MD (VIC)	3	31	-	2	18	3	6	63
4 MD (SA)	-	3	-	-	2	-	1	6
5 MD (WA)	-	5	-	-	5	-	1	11
6 MD (TAS)	-	-	-	-	2	-	-	2
7 MD (NT)	-	-	-	-	2	-	-	2
Canberra	1	36	3	7	22	4	6	79
								31.6%
Column Total	5	110	7	11	79	10	28	250
Percent	2.0	44.0	2.8	4.4	31.6	4.0	11.2	100.0%

Long Term Planning and Management Techniques

Efforts to find a relationship between time spent in long term planning and the number of management techniques respondents had "made use of" did not produce a significant correlation.

Formation of the Scales

As an initial screening, Cronbach alphas were computed for all questionnaire items (except the sections on background, management interventions and management techniques). This led to the deletion of items 2-5, 2-12 and 2-17 in the Job Inventory section, item 3-3 in the Job Satisfaction section, items 4-16 and 4-23 in the Supervision/Management section, items 5-9 and 5-15 in the Organisation Climate section and item 8-12 in the Perceived Effectiveness section. In addition, item 8-15 was deleted because more than 20% of respondents failed to answer the item. Reliabilities were recalculated after the deletion of items and final reliabilities for the sections were:

- a. Job Inventory .88 (21 items);
- b. Job Satisfaction .84 (11 items);
- c. Supervision/Management .93 (25 items);
- d. Organisation Climate .79 (13 items); and
- e. Perceived Effectiveness .83 (20 items).

It is acknowledged that high reliability does not preclude existence of a multifactor structure (Green, Lissitz and Mulaik, 1977).

An orthogonally rotated principal components factor analysis was performed on all questionnaire items except for sections containing the items on background, management interventions and management techniques. The factor analysis was used only as a guide to grouping variables into homogeneous subsets that could be used in a model (rather than having a variable for each questionnaire item). Items loading less than .5 were eliminated from inclusion in completed factors. A summary of factor analysis results is contained in Table 15 (page 26). Factor loadings for all items are contained in Annex G.

A one way MANOVA was performed on selected background items (rank, career division and attendance at Staff College) with effectiveness factors (component performance, unit solidarity, resource shortfalls, management expertise and quality and quantity of output). The MANOVA did not produce any significant differences among background items and accordingly the data were analysed as a single sample. Since the responses did not vary it was considered appropriate to treat the data as a single set fitting a LISREL model to the data.

Development of the LISREL Model

The predicted model is presented in Figure 4 (page 25). Its parameters have been estimated using the LISREL model. The model was improved using the maximum modification index of the LISREL programme to add links. Links were also eliminated where the standard error negated relationships. The objective was to get the best fit possible without "overfit". Development of the final model is summarised in Table 14.

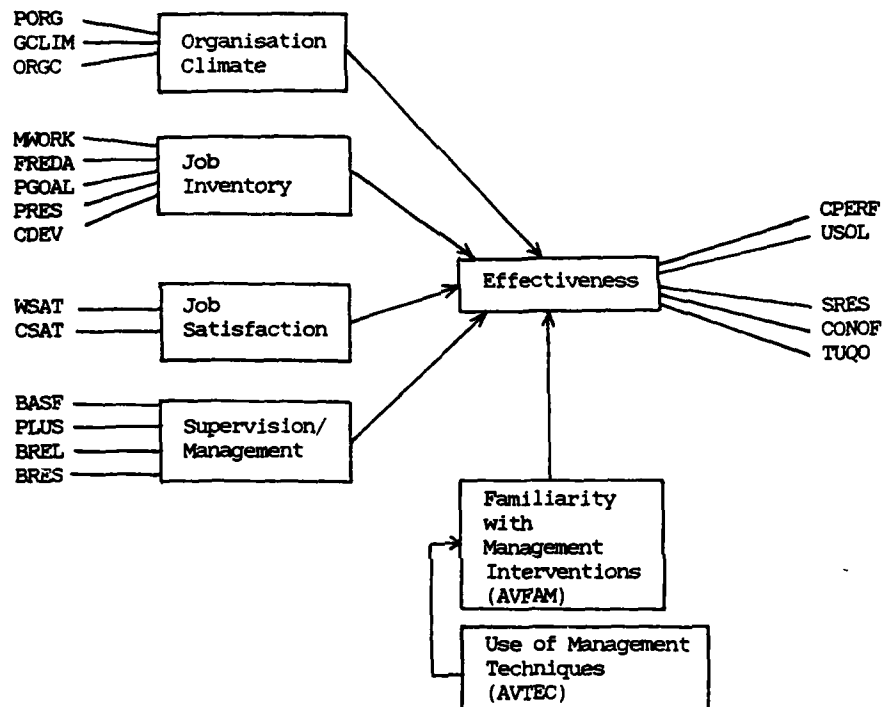
Table 14

Development of Final LISREL Model

<u>Step</u>	<u>Change</u>	<u>Goodness of fit</u>	<u>Adj goodness of fit</u>	<u>RMS</u>	<u>Chi sq.</u>	<u>df</u>
1	Predicted model	.680	.605	.244	1178.26	187
2	Add job satisfaction- job inventory	.741	.680	.222	954.43	188
3	Add supervision- organization climate	.794	.744	.182	750.43	186
4	Add pride in organization- job inventory	.802	.753	.166	688.33	185
5	Delete supervision- effectiveness	.803	.755	.166	688.80	186
6	Delete job inventory- effectiveness	.801	.754	.167	696.66	187

Figure 4

The Predicted Model



PORG	Pride in organisation
GCLIM	General organisation climate
ORGS	Organisation strengths
MWORK	Meaningful/responsible work
FRED	Freedom/autonomy
PGOAL	Performance goals
PRES	Resources
CDEV	Career development
WSAT	Job satisfaction
CSAT	Contributions to satisfaction
BASF	Assistance and feedback from immediate superior
PLUS	Strengths of immediate superior
BREL	Relationship with immediate superior
BRES	Respect of immediate superior
AVFAM	Familiarity with management interventions
AVTEC	Use of management techniques
CPERF	Component performance
USOL	Unit solidarity
SRES	Resource shortfalls
CONOF	Management expertise
TUQO	Quantity and quality of output

Table 15

Factor Analysis by Section (Rotated Factors)

<u>Section/Factor</u>	<u>% Total Variance</u>	<u>Highest Loading</u>	<u>Total items</u>	<u>Loadings above .50</u>
<u>Job Inventory</u>				
Meaningful work	33.5	.85	11	6
Freedom/Autonomy	11.1	.88	8	4
Task accomplishment	7.9	.75	9	4
Resources	6.4	.87	4	3
Career development	<u>4.7</u>	.79	5	3
	63.6			
<u>Job Satisfaction</u>				
Job related satisfaction	38.1	.87	8	6
Contributions to satisfaction	<u>10.1</u>	.68	6	4
	48.2			
<u>Supervision/Management</u>				
Immediate Superior (IS) Assistance/Feedback	38.8	.81	12	9
IS Strengths	10.7	.80	8	7
Relations with IS	8.0	.78	7	6
IS Recognition	<u>4.5</u>	.82	7	3
	62.0			
<u>Organisation Climate</u>				
Pride in organisation	30.6	.81	7	3
General climate	13.2	.76	6	4
Organisation strengths	<u>8.1</u>	.76	5	4
	51.9			
<u>Effectiveness</u>				
Unit performance	28.6	.74	11	7
Unit solidarity	8.3	.77	5	2
Management and expertise	6.4	.74	4	2
Quantity and quality of output.	5.4	.75	4	2
Resource shortfalls	<u>7.2</u>			
	55.9			

The Measurement Model

The exploratory factor analysis that was used to specify, a priori, the relations between measures and factors was confirmed in the final LISREL model (Figure 5) by the fit achieved between observed measures and independent and dependent latent (unobserved) variables (LX, LY). Table 16 sets out the variables in the current study.

Table 16

Variables Used in the LISREL Model

Independent latent variables:

Organisation climate (PORG, GCLIM, ORGS)
Job inventory (MWORK, FRED, PGOAL, PRES, CDEV)
Job satisfaction (WSAT, CSAT)
Supervision/management (BASF, PLUS, BREL, BRES)
Familiarity with management interventions
Use of management techniques

Dependent latent variables:

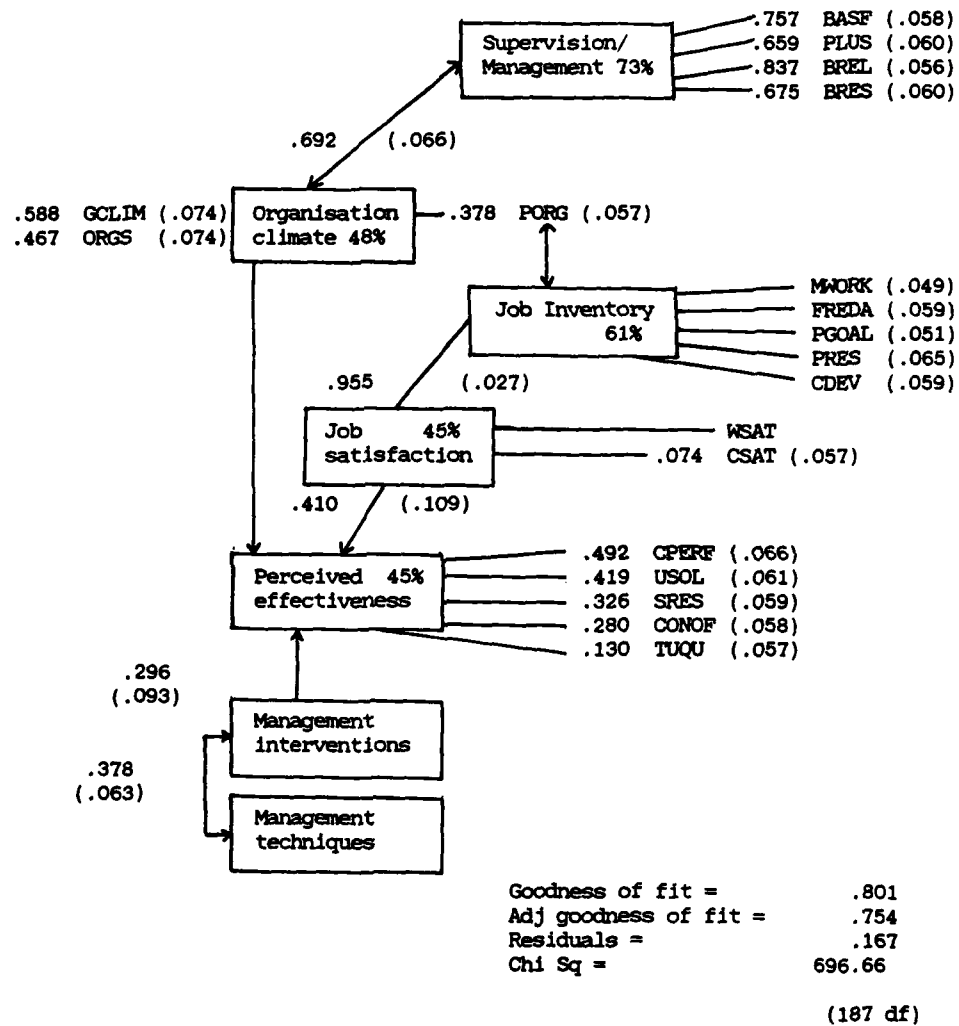
Perceived effectiveness (CPERF, USOL, SRES, CONOF, TUQO)

The Structural Model

The unobserved variables having been defined, the final LISREL model (Figure 5) has estimated their interrelations. When compared to the predicted model (Figure 4) it shows familiarity with management interventions to be correlated with perceived effectiveness (though observed measures only accounted for 45% of the variance for perceived effectiveness) and a stronger correlation between familiarity with management interventions and use of management techniques. Organisation climate and job satisfaction are shown to be related to perceived effectiveness. Supervision/management and job inventory do not directly affect perceived effectiveness as predicted, but affect it indirectly through organisation climate and job satisfaction, respectively. The relationship of job satisfaction to effectiveness with this particular population seems inconsistent with previous studies (Locke, 1976) using more general populations. It must be noted that it is impossible to get a pure measure of job satisfaction. The very strong correlation between job inventory and job satisfaction suggests that a change in the theoretical model combining the two could lead to a better overall model.

Figure 5

Final Maximum Likelihood (LISREL) Model



Note. Figures in brackets are standard error. Individual maximum-likelihood parameter estimates are considered meaningful where they are at least twice the standard error. Figures in squares are percentage of variance accounted for by factors.

Discussion

Main Results

The major findings of the study were as follows:

- a. A moderately positive relationship was found between a set of 11 management interventions and perceived effectiveness. This result is qualified by the variance accounted for with perceived effectiveness.
- b. A stronger correlation was found between familiarity with 11 management interventions and familiarity with seven management techniques.
- c. A moderate relationship was found between job satisfaction and perceived effectiveness.
- d. Officers in the sample were much more familiar with management techniques from the general community than would have been expected.
- e. Management techniques and experience from the general community were seen as much more relevant by the officers in the study than would have been expected.
- f. Familiarity with, and frequent use of, computer systems was reported by the majority of officers in the sample.
- g. Only half of the respondents had definite plans to remain in the Army.
- h. Use of financial incentives was seen overwhelmingly as the management intervention not well used by the total organisation, receiving the least attention on the job and the intervention respondents had used least, and
- i. No relationship was found to exist between time spent in long term planning and familiarity with a list of seven management techniques.

Shortcomings and Qualifications of Results

Several qualifications apply to the results of the study.

Scope of the Study. The study was restricted to a population which was seen to represent "middle management" in the Australian Army. As such the study represents an effort to gauge the middle manager's perception of effectiveness in the total organisation and its components and to place these perceptions in an overall model of organisational effectiveness.

Validity and Reliability of Measures. Attitudinal measures were used. Perceived effectiveness in particular was used as a dependent variable in the absence of concrete measures. The measure appears to have both content and construct validity on the basis that the concept of perceived effectiveness was defined, though measured variables failed to account for much of the variance with perceived effectiveness. All of the individual questionnaire sections demonstrated high reliabilities.

Comparisons with Previous Studies. Because of the specific nature of the population used, and the use of attitudinal measures, direct comparison with previous studies is difficult. It is worth noting that the management interventions Guzzo, Jette and Katzell (1985) found to be the most powerful in productivity programmes (training, goal setting) were also the interventions

that Army Officers were most familiar with. In comparison, the only intervention that received more attention by respondents was "appraisal and feedback"; the interventions that received substantially less were "financial compensation" and "use of sociotechnical systems".

Implications of the Study

The results of the study have implications for general management practices and the training of officers in the Australian Army. Hopefully, the study has taken the initial steps that will make the point that there needs to be an awareness of organisational effectiveness in the organisation. Additionally, the study has given some idea of the management resources available within the organisation.

The representative sample of middle management Australian Army officers in the study perceived themselves, the total organisation and its component parts or units as being basically effective. The question then becomes: How do we make the overall organisation even more effective by making its component parts more effective? The problem is not how we make an ineffective organisation effective, it is how do we make an effective organisation even more effective?

In the case of military organisations, there is the experience of other such organisations that can be of benefit, even in those instances where effectiveness efforts have not been totally successful. A search of the literature on organisational effectiveness in military organisations indicated that individual services have employed a variety of approaches including Organisational Development (U.S. Army), Management by Objectives (U.S.A.F.), and an eclectic approach (U.S. Navy). Methods that appear to have the most usefulness can be grouped under the rubric of "Performance Orientation" - approaches that stress the specification and measurement of performance. These would include programmes that use "the Rational Manager" model (Kepner and Tregoe, 1965) as used with the Australian Army training system; the Hunter and Schmidt (1983) model, using a standard deviation of job performance in dollar terms (and which appears to work at least in the area of selection); and more particularly the procedures of Tuttle and Weaver (1986) derived from a Management by Objectives model and based on the development of suitable measurement indicators.

Performance Orientation is not new to the Australian Army at the level of the individual. The Army training system is based on individuals attaining objectives; the physical training programmes and the tests of elementary training programme both involve setting standards and measuring performance against the standards. The personnel appraisal system is based on similar principles. Those same principles are still being discussed, but at the level of the overall organisation and its components or units.

Despite their usefulness, Performance Orientation approaches until now have only taken the practitioner to the point of measuring the gap between targeted performance and actual performance. They do not address ways of reducing or eliminating the gap and they do not make use of the broad range of problem solving and decision making techniques available. In addition, they do not take advantage of the significant research of Guzzo et al (1985) on management interventions.

A Proposed Operational Model

A proposed model is specified at the organisational component level in Table 17 which combines the current most sophisticated approach to effectiveness improvements (Tuttle and Weaver, 1986) with the use of management interventions and problem solving processes. Training in problem solving and use of management interventions is inherent in the proposed model. Figure 6 shows a way of keeping track of performance over time for a single key result area.

Table 17

Proposed Operational Model

<u>Process</u>	<u>Action</u>	<u>Source</u>	<u>Method</u>
Awareness:	Collection of data	2	Survey

Analysis:	Analysis of data	2	Optional

Planning:	Define philosophy/Org purpose	1	Nominal Group
	Define KRAs for each function	1	
	Define priorities for KRAs	2	
	Define relevant measurement/ performance indicators	1	
	Define specific goals for each indicators	1	

Implementation:	Convert plans to actions	2	

Evaluation:	Measure gap between performance and goals	1	

Problem solving:	Structuring the problem		
	Choice of relevant management intervention(s)	3	
	Choice of management techniques	4	
	Use of divergent problem solving	4	

Re-evaluation and, if necessary, return to previous stages			

Sources:

1. Somers, Locke and Tuttle (1985/86)
2. Tuttle (1983)
3. Guzzo and Bondy (1983)
4. Current Study

Figure 6
Objectives Matrix

1 KRA No.1 Adequate No. Engines to Meet Mission Requirements					
2 Indicator title	1	2	3	4	5
	Abort	Delay	N.O.R.S.	Quality	Impact
3 Indicators	# takeoff aborts	Avg. time between writeup and repair completed	Not operational for supply rate	# repeat repairs Y2	No. hours engine stays on wing
	# takeoffs			# reports Y1	
4 Measurements (current period)	.03	18 hrs.	.09	.87	100
	.01	13	.01	1.00	100
5 Performance Level	.02	14	.02	.9	90
	.03	15	.04	.8	80
	.05	16	.09	.7	70
	.10	17	.15	.6	60
	.16	18	.25	.5	50
	.24	19	.35	.4	40
	.35	20	.45	.3	30
	.43	21	.55	.2	20
	.60	22	.65	.1	10
	Over .75	23+	.70+	0	0
10 (1-2 yr. goal)					
9					
8					
7					
6					
5					
4					
3 (baseline)					
2					
1					
0 (worst)					
6 Current period equivalent score	8	5	7	8	10
7 Manager's weight	30	20	20	20	10
8 Equivalent score X weight	240	100	140	160	100
					KRA Score
					740

Implementation of the model. Several approaches could be taken in implementing the proposed operating model. The emphasis should be on assessing the impact of the actions taken. This suggests the following plan:

- Arrangements are made for an officer conversant with organisational assessment and problem solving processes to observe the U.S.A.F. programme in operation.
- Modification of U.S.A.F. programme for use with the Australian Army.
- Development of a problem solving training package to be used in conjunction with the effectiveness programme.

- d. Implementation of the combined programme on a voluntary unit by unit basis with continued assessment of impact, and
- e. Detailed review of the programme after a period of 18 months.

Other Relevant Items in the Study for Further Research/Development

It became apparent in the pilot study that QCs are used in the Army (but not with that label). In particular, this applies in engineering workshops. This was confirmed to some degree in the main study where more than 24% of respondents indicated that they had made some use of QCs. The success or otherwise of these procedures deserves some form of assessment with a view to improving their use or generalising their use to other components of the organisation. In considering any individual technique (be it QCs or something else) the question is not whether the technique is fashionable, but rather if it produces desired results.

The LISREL structural model indicated a relationship between job satisfaction and perceived effectiveness. Although it was beyond the scope of the current study to follow up this relationship it could provide the basis for a follow-up study.

The inability of measured variables to explain a larger percentage of the variance for perceived effectiveness suggests that further work is required on developing measures of perceived effectiveness.

Management and Leadership

This study has not been concerned with leadership. It has looked at the effect of management interventions and management techniques on organisational effectiveness. It is difficult to discuss management in isolation, particularly in a military setting. All military officers experience an intense socialisation process where principles of leadership are constantly stressed. "Management" as a term is used infrequently. One result of this is that management and leadership tend to be confused. An example of this is a respondent in the current study stating that he did not manage, he commanded. It is widely accepted (Somers, Locke and Tuttle, 1985/1986) that it is impossible to be a good leader without being a good manager. Researchers in the field would argue that the officer who mismanages the careers of his soldiers cannot be a good leader. While there is no substitute for the principles of good leadership and good management, organisational effectiveness erodes rapidly if these principles become cliches rather than being reflected in actions. There is a difference between perceived effectiveness and measured effectiveness. When effectiveness improvement procedures are implemented, stakeholders in the organisation are committed to actions and the measurement of actual outcomes. Measured achievement becomes the focus of attention, thus reducing reliance on subjective perceptions about how well the organisation or organisational component is performing.

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ANNEX A

This questionnaire represents an effort to gather data for research into organisational effectiveness in military organisations. The intention is that the data collected could be used when decisions are made concerning managerial training for Officers and when considering the relevance of specific managerial techniques and interventions.

Army Officers in the worn rank of Major and Lieutenant Colonel (representing middle management) are being surveyed. Great care has been taken to ensure total anonymity and confidentiality. You have been selected as a respondent at random by using a set of random numbers. When the questionnaire and answer sheet are returned to the Military Secretary there will be nothing to link them to you. Despite this, completion of the questionnaire, or any part of it, is completely voluntary.

Instructions

1. You should put your answers on the separate answer sheet provided. Item numbers are listed by section and item. To answer Item 1-1 you would put a 1 on the answer sheet if your worn rank is Major and a 2 if your worn rank is Lieutenant Colonel.

Item No	Answer	Code
1-1	2	
1-2		
1-3		

2. The right hand column on the answer sheet marked "Code" can be ignored, it is only an aid to formatting the data for the computer.

3. On completion of the questionnaire please return the answer sheet and questionnaire to:

Office of the Military Secretary
Department of Defence (Army)
Russell Offices
CANBERRA ACT 2600

SECTION 1BACKGROUND INFORMATION

1-1 Please indicate your worn rank.

1. Major 2. Lieutenant Colonel
-

1-2 What is your age? (Last Birthday)

1-3 Your career division is:

1. GSO 2. PSO 3. SSO
-

1-4 Your sex is:

1. Male 2. Female
-

1-5 Your allotted Corps is:

- | | |
|--------------|--------------|
| 01. RAAC | 10. RAAMC |
| 02. RAA | 11. RAADC |
| 03. RAE | 12. RAAOC |
| 04. RA Svy | 13. RAEME |
| 05. RA Sigs | 14. RAAEC |
| 06. RA Inf | 15. AALC |
| 07. AA Avn | 16. AA Psych |
| 08. Aust Int | 17. RACMP |
| 09. RACT | 18. AACC |
-

1-6 Your highest level of education is:

1. Higher degree (Masters or PhD)
 2. Honours degree
 3. Graduate diploma
 4. Bachelor's degree
 5. Partly completed degree or diploma
 6. Post secondary or technical college certificate
 7. Higher School Certificate or Matriculation
 8. Education below HSC
-

1-7 You have passed Staff College (any)

1. Yes. 2. No
-

1-8 How many military members do you directly supervise
(Write PR 19's and PR 66's on)?

- | | |
|-----------|---------------|
| 1. None | 5. 9 to 12 |
| 2. 1 to 2 | 6. 13 to 20 |
| 3. 3 to 5 | 7. 21 or more |
| 4. 6 to 8 | |
-

1-9 Does your immediate superior write your PR 19?

1. Yes 2. No
-

1-10 Which of the following best describes your career intentions?

1. To continue in the Army
 2. To retire in the next 12 months
 3. To resign in the next 12 months
-

1-11 What is the probability associated with the previous answer?

1. Will happen
 2. Most likely to happen
 3. May happen
 4. Undecided
-

1-12 Where did you complete your officer training?

- | | |
|-------------------|--------------------------|
| 1. RMC Duntroon | 4. In-service Commission |
| 2. OCS Portsea | 5. Direct Appointment |
| 3. OTU Scheyville | 6. Other |
-

1-13 Are you on a short service commission?

1. Yes 2. No
-

1-14 Indicate the major employment area you have spent time in
as an Army Officer:

1. Materiel/Project Management
 2. Personnel/Manpower
 3. Logistics
 4. Training/Instructional
 5. Operations
 6. Command/Regimental
 7. Other _____
-

1-15 What is the major emphasis of your current posting?

1. Materiel/Project Management
 2. Personnel/Manpower
 3. Logistics
 4. Training/Instructional
 5. Operations
 6. Command/Regimental
 7. Other _____
-

1-16 What is the location of your current posting?

- | | |
|-------------|--------|
| 1. Canberra | 5. 4MD |
| 2. 1MD | 6. 5MD |
| 3. 2MD | 7. 6MD |
| 4. 3MD | 8. 7MD |
-

1-17 How many postings (geographical moves) have you had since being commissioned?

1. Less than 4
 2. 4-8
 3. More than 8
-

1-18 How many posted job appointments have you had since being commissioned?

1. Less than 5
 2. 5-10
 3. More than 10
-

1-19 How long have you been in your present job?

1. Less than 3 months
 2. 3-6 months
 3. 7-9 months
 4. 10-12 months
 5. 13-18 months
 6. 19-24 months
 7. More than 2 years
-

1-20 Are you currently in an establishment position?

1. Yes
 2. No
-

A-5

1-21 Do you expect your job to be filled when you are posted?

1. Yes 2. No

1-22 On your current job do you spend a significant amount of time
(more than 25%) involved in long term planning?

1. Yes 2. No

GO ON TO THE NEXT SECTION

SECTION 2JOB INVENTORYInstructions

1. In this section you are presented with a number of statements which refer to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent that the statement is true for your job by choosing the scale item that best represents your job.

1 = Not at all	5 = To a fairly large extent
2 = To a very little extent	6 = To a great extent
3 = To a little extent	7 = To a very great extent
4 = To a moderate extent	

Not at all 1 2 3 4 5 6 7 To a very great extent

2. Select the corresponding number for each question and enter it on the separate answer sheet.

2-1 To what extent does your job provide a challenge, in requiring you to use the entire range of your training and experience?

2-2 To what extent is your job significant, in that it affects others in some important way?

2-3 To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it?

2-4 To what extent does just doing your job provide you with chances to find out how well you are doing?

2-5 To what extent do "additional duties" interfere with the performance of your primary job?

2-6 To what extent do you have adequate personnel resources to accomplish your job?

2-7 To what extent do you have adequate financial resources to accomplish your job?

2-8 To what extent is the amount of work space provided adequate for the work being performed?

2-9 To what extent does your job provide the chance to be responsible for your own work?

2-10 To what extent does doing your job well affect many people?

2-11 To what extent does your job require you to be a "generalist" as opposed to being a "specialist"?

- | | |
|-----------------------------|------------------------------|
| 1 = Not at all | 5 = To a fairly large extent |
| 2 = To a very little extent | 6 = To a great extent |
| 3 = To a little extent | 7 = To a very great extent |
| 4 = To a moderate extent | |

2-12 To what extent does your job give you freedom to do your work as you see fit?

2-13 To what extent are you allowed to make the major decisions required to perform your job well?

2-14 To what extent are you proud of your job?

2-15 To what extent do you know exactly what is expected of you in performing your job?

2-16 To what extent are your job performance goals (as specified by the organisation) difficult to accomplish?

2-17 To what extent are your job performance goals clear and specific?

2-18 To what extent are your job performance goals realistic?

2-19 To what extent does your job keep you busy?

2-20 To what extent do you know what the objectives of the Army are?

2-21 To what extent are you being prepared to accept increased responsibility?

2-22 To what extent do people who perform well receive recognition?

2-23 To what extent do you feel adequately trained to perform your job?

2-24 To what extent does your work give you pride and a feeling of self-worth?

GO ON TO THE NEXT SECTION

SECTION 3

JOB SATISFACTION QUESTIONNAIRE

Instructions

1. The items below relate to your current job and the Army as a profession. Indicate your satisfaction or dissatisfaction with each item on a seven point scale.

2. For items not applicable to you, write "0" as your answer.

Extremely dissatisfied 1 2 3 4 5 6 7 Extremely satisfied

- 3-1 Information on policies and procedures.
The adequacy and availability of information on policies.
- 3-2 Feeling of helpfulness
The chance to help people and improve their welfare through the performance of your job.
- 3-3 Characteristics of the local area
The geographical area in which you work.
- 3-4 Social contact
Opportunity to meet new people and the meaningfulness of social contacts required by the job.
- 3-5 Family attitude towards job
The recognition and the pride your family has in the work you do.
- 3-6 Self-improvement opportunities
The educational and recreational opportunities provided.
- 3-7 Verbal and written communication
The amount of required telephone communication and required paperwork in your job.
- 3-8 Work itself
The challenge, interest, importance, variety and feelings of accomplishment you receive from your work.
- 3-9 Acquired valuable skills
The chance to acquire valuable skills in your job which prepare you for future opportunities.
- 3-10 Support services
Medical, dental and legal services provided.
- 3-11 Your job as a whole.
- 3-12 Community attitudes
Attitudes in the general community about the profession of arms.

GO ON TO THE NEXT SECTION

SECTION 4SUPERVISIONInstructions

1. The statements below describe characteristics of managers. Indicate your agreement with statements by choosing the point on the seven point scale which best represents your attitude concerning your immediate superior. You are reminded that your answers will remain anonymous.

2. For items not applicable to you, write "0" as your answer.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

- 4-1 My immediate superior (IS) tells me exactly what he expects me to do.
- 4-2 My IS is not a good planner.
- 4-3 My IS does not set high performance standards.
- 4-4 My IS informs me of changes in advance.
- 4-5 My IS is not consistent in predicting events in our organisation.
- 4-6 My IS does not perform well under pressure.
- 4-7 My IS encourages me toward greater accomplishment.
- 4-8 My IS over controls my work.
- 4-9 My IS is approachable.
- 4-10 My IS takes time to help me when needed.
- 4-11 My IS respects my opinions in his decision making.
- 4-12 My IS is not very interested in helping resolve my problems.
- 4-13 My IS helps to stimulate enthusiasm for the job.
- 4-14 My IS helps me set specific goals.
- 4-15 My IS is not consistent in his managerial behaviour.
- 4-16 My IS does not let me know when I am doing a good job.
- 4-17 My IS lets me know when I am doing a poor job.
- 4-18 My IS always helps me improve my performance.
- 4-19 Feedback from my IS has contributed significantly to improvement in my job performance.
- 4-20 My IS encourages ideas for improving procedures.
- 4-21 My IS is not an effective manager.

A-10

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

- 4-22 My IS keeps me informed of changes that affect my job.
- 4-23 My IS rarely gives me feedback on how well I am doing my job.
- 4-24 My IS usually supports my decisions.

GO ON TO THE NEXT SECTION

A-11

SECTION 5

ORGANISATION CLIMATE INVENTORY

Instructions

1. Below are items which describe characteristics of your organisation. Indicate your agreement by choosing a point on the seven point scale which best represents your opinion concerning your organisation (in this case, the Army as a whole, not unit or formation).

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

- 5-1 Your organisation provides all the necessary information for you to do your job effectively.
- 5-2 Your organisation does not always provide adequate and accurate information to you.
- 5-3 You are usually aware of important events and situations.
- 5-4 Your complaints are aired satisfactorily.
- 5-5 Your organisation is not very effective when it comes to planning.
- 5-6 Your organisation is better run now than in the past.
- 5-7 Your organisation is very interested in the attitudes of members toward their jobs.
- 5-8 You are very proud to work for this organisation.
- 5-9 The people affected by decisions are not asked for their ideas before the decisions are made.
- 5-10 Personnel are not recognized for outstanding performance.
- 5-11 This organisation does not have clear-cut reasonable goals.
- 5-12 You feel motivated to contribute your best efforts to this organisation.
- 5-13 This organisation does not reward individuals based on performance.
- 5-14 This organisation insures that you have the necessary resources to accomplish the job.
- 5-15 In accomplishing a particular task, you tend to rely more on personal contact, rather than on formal channels.

GO ON TO THE NEXT SECTION

SECTION 6MANAGEMENT INTERVENTIONSInstructions

1. Below are listed 11 commonly used management 'interventions' or areas where changes can be introduced in an attempt to increase effectiveness.

2. Indicate your familiarity in using each of the interventions by selecting the appropriate point on the seven point scale and recording the answer on the separate answer sheet.

No familiarity 1 2 3 4 5 6 7 Great deal of familiarity

6-1 Recruitment and Selection

6-2 Training and Instruction

6-3 Appraisal and Feedback

6-4 Goal Setting

6-5 Financial Compensation

6-6 Work Redesign (Changes to job variety, scope of responsibilities, amount of supervision, etc)

6-7 Supervisory Methods

6-8 Organisational Structure/Design

6-9 Decision making methods

6-10 Work schedules

6-11 Sociotechnical Interventions (Focus is on getting the best match of people and the equipment and methods in the organisation).

For the following questions record a number on the answer sheet between 1 and 11 corresponding to one of the interventions listed above.

6-12 In efforts to maximize effectiveness which of the 'interventions' listed above do you think the organisation makes the best use of?

6-13 Which single intervention is not well used?

6-14 In your own job, which single intervention receives the most attention?

6-15 With which single intervention do you have the most experience in using?

The list below consists of positive reportable items under the POR/AMAN system.

6-16 If you were required to assess general unit performance and had no other information available, which single item would be given the most weight?

1. Long service awards
2. Course passes
3. Re-enlistments
4. Re-engagements in advance of due date.

6-17 Which item immediately above would be given the least weight?

The list below consists of negative reportable items under the POR/AMAN system.

6-18 If you were required to assess general unit performance and had no other information available, which single item would be given the most weight?

6-19 Which item would be given the least weight?

1. AWOL's
2. Military and civil offenses
3. Reductions in rank
4. Warnings for discharge.

GO ON TO THE NEXT SECTION

SECTION 7

MANAGEMENT TECHNIQUES AND APPROACHES

The following definitions should be referred to when answering questions in this section.

1. Network Analysis (PERT - Performance Evaluation and Review Techniques and CPM - Critical Path Method). In complicated projects it is beyond the power of any individual to keep all tasks and their inter-relationships in mind and figure out the effect of speeding up one step on total project time. PERT is used to get around these difficulties by the use of a network to depict graphically a project plan. CPM identifies activities which are 'critical' based on the scheduled duration of the project.
2. Management by Objectives emphasizes the specification of work objectives, monitoring of accomplishments, reward attainment when objectives are met, and participation in the setting and review of work objectives.
3. Value Analysis (Value Engineering) is a set of evaluation techniques used to relate cost to worth, taking into account function, timeliness, and alternatives. Value Analysis techniques emphasize problem solving through the definition of critical factors.
4. Quality Circles (QCs) are small groups of employees who meet on a regular basis to identify, analyze, and solve problems they experience on their jobs. Through QCs, employees serve as "in-house" consultants on how to improve conditions and results. Participation is voluntary. Each member of a circle has the opportunity to make suggestions or contribute in an effort to enhance the quality of services provided; solve work place problems; develop a closer identification with the goals of the organisation, and improve communication between supervisors and workers.
5. Electronic Spreadsheets are self contained computer software programmes that greatly simplify planning, budgeting and forecasting. These programmes allow the re-calculation of an entire page of figures every time a single basic element is changed. This is particularly useful in testing questions that begin "what if". In the military organisation these programmes are particularly well suited to such functions as strength management and allocation of soldiers to Corps.
6. Organisation Development (OD) is a planned model of long range change in organisations based on analysis of systems. OD emphasizes such techniques as team building, conflict resolution and intergroup laboratories.
7. Divergent Problem Solving is a wide group of concepts and techniques used where many original solutions to a problem may be required instead of one "correct" solution or where a problem is not well defined and may require the solving of multiple sub-problems. Concepts employed include the questioning of basic assumptions, attribute listing, cause and effect reversals and structured mathematical approaches.

Instructions

1. The list below consists of a range of managerial techniques and approaches. Answer the questions by indicating your familiarity with the listed techniques and recording the answer on the separate answer sheet.

2. Some of the questions also require that you list individual numbers on this questionnaire.

1. Network Analysis (PERT, CPM)
2. Management by Objectives
3. Value Analysis
4. Quality Circles
5. Electronic Spreadsheets
6. Organization Development
7. Divergent Problem Solving

- 7-1 How many of the methods in the list have you heard of before? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-2 How many of the methods in the list have you observed being used? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-3 For how many methods in the list have you received Army sponsored training? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-4 For how many methods in the list have you received training outside the Army? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-5 How many of the methods in the list have you made some use of? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-6 How many of the methods in the list have you made extensive use of? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-7 How many of the methods in the list do you make daily use of? (Record total number on the answer sheet and list individual numbers here) _____.
- 7-8 What other structured management techniques have you made use of? (List) _____

- 7-9 In your current appointment how often do you make use of Army computer (EDP) facilities? (record on answer sheet).
- | | |
|------------------|---------------|
| 1. Never | 4. Daily |
| 2. Rarely | 5. Constantly |
| 3. Occassionally | |

Answer the following questions by choosing the appropriate point on the seven point scale and recording the answer on the separate answer sheet.

No relevance 1 2 3 4 5 6 7 Very relevant

- 7-10 In general terms, to what extent do management experience and management techniques in the general community have relevance for Army managers?
- 7-11 To what extent have management experience and management techniques from the general community been relevant in your previous job appointments?
- 7-12 To what extent do management and management techniques from the general community have relevance in your current appointment?
- 7-13 In what areas are there significant differences between the tasks of civilian managers and Army managers?
(detail your answer below).

GO ON TO THE NEXT SECTION

SECTION 8PERCEIVED EFFECTIVENESSInstructions

1. The statements below deal with work performance. Indicate your agreement with each statement by selecting the point on the seven point scale that best represents your attitude concerning work performance.

2. For some jobs certain statement may not be applicable. Should this be the case record an "0" for the statement on the answer sheet.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

- 8-1 The QUANTITY of output of your section or unit is very high.
- 8-2 The QUANTITY of output of your section or unit has improved significantly since your arrival.
- 8-3 The QUALITY of work of your section or unit is very high.
- 8-4 The QUALITY of work of your section or unit has not improved significantly since your arrival.
- 8-5 Your section or unit always get maximum output from available resources (e.g. personnel and material).
- 8-6 Your section or unit's performance in comparison to similar units is very high.
- 8-7 Your section or unit does not perform very effectively under pressure.
- 8-8 Your co-workers maintain very high standards of performance.
- 8-9 The members of your section or unit do not perform very well when involved in unexpected deadlines.
- 8-10 You get the very best out of sub-ordinates under all conditions.
- 8-11 You consider yourself to be a very good "man manager".
- 8-12 You are better at managing "things" rather than dealing with people.
- 8-13 Your section or unit generally gets work out on a timely basis meeting most time constraints or deadlines.
- 8-14 In some respects your section or unit is better than others because _____.
- 8-15 In some respects your section or unit is not as good as others because _____.

- 8-17 Your section or unit is better than others because of the emphasis on teamwork.
- 8-18 Your section or unit is better than others because of an emphasis on time constraints.
- 8-19 Your section or unit is worse than others because of manning shortfalls.
- 8-20 Your section or unit is worse than others because of a lack of diversity or depth of training and experience.
- 8-21 Your section or unit is worse than others because of a lack of equipment.
- 8-22 Your section or unit is better than others because of the mateship and mutual support that exists.

ANNEX B

District Support Unit (Melbourne)
Victoria Barracks
St Kilda Road
MELBOURNE VIC 3004

17 June 1986

District Psychology Officer
3rd Military District
Victoria Barracks
St Kilda Road
MELBOURNE VIC 3004

Deputy Chief of Personnel
Department of Defence (Army Office)
CANBERRA ACT 2600

For Information:

Directorate of Psychology - Army
(CP4-6-02)
Department of Defence (Army Office)
CANBERRA ACT 2600

PROPOSED STUDY OF ORGANISATIONAL EFFECTIVENESS

1. Currently I am engaged in two years long term schooling doing a Master of Arts degree in Applied Psychology at the University of Melbourne. Partial requirement for the degree is completion of a 'minor' thesis. While there is no requirement that the thesis topic involve the Army, it is logical that the area of study should be one that would benefit the Army.
2. The topic I have chosen for a thesis is Organisational Effectiveness in Military Organisations. This topic was chosen after reviewing the available literature.
3. In a climate of increased scrutiny of public sector spending, the Australian Department of Defence has been criticised frequently for project management shortcomings. Overseas a similar climate prevails and, together with unfavourable productivity comparisons for the US against such countries as Japan, this has led to increased organisational research efforts. These efforts have led among other things to the development of methodologies for the evaluation of organisational performance. There have also been studies to evaluate the effects of traditional management techniques, organisational effectiveness programmes, organisational assessment procedures and management interventions.

4. These various research efforts have not been co-ordinated or comprehensive, even within the US Defence Department. For example, the US Army has for 10 years been implementing an Organisational Effectiveness Programme, while the US Air Force has developed and implemented an Organisational Assessment Procedure.

5. To date, there has not been any concerted effort to study the effect of a range of specific management techniques on productivity and effectiveness. The proposed study (Annex A) would survey the attitudes of a sample of Army Officers in the ranks of Major and Lieutenant Colonel regarding:

- a. their familiarity with, training in, and experience in using a range of management techniques;
- b. the effectiveness of their own efforts and those of the members with whom they work;
- c. the work climate in the Army; and
- d. management styles.

6. Possible benefits to the Army from the proposed study include:

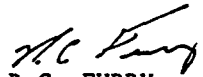
- a. An estimate of the management skills available in the Army.
- b. The development of a framework that would allow the identification of those management interventions that are most relevant and most useful to the Army in specific areas. (Keeping in mind that there may be a culture specific element in the use of some interventions).
- c. A proposal for the development of useful measurement indicators of effectiveness on a component and global level incorporating data from the POR/AMAN system.
- d. The collection of data on the use of management techniques and management interventions that could be taken into account when making specific decisions concerning management training in the Army.

7. Approval is sought to carry out a study into organisational effectiveness that would require the following resources from the Army:

- a. Names and appointments of 30 Army Officers in the worn rank of Major and 10 Officers in the worn rank of Lieutenant Colonel in the Melbourne area and authorisation to interview those Officers for the pilot study commencing September 1986.

B-3

- b. Printing of 380 questionnaires for the final study and the mailing of those questionnaires with cover letters endorsing the study to 280 Officers in the rank of Major and 100 Officers in the rank of Lieutenant Colonel. All Officers randomly selected using a list of random numbers, without regard for Corps, posted area, etc.


R.C. FURRY
Major
Long Term Schooling

PROPOSAL FOR A THESIS ON ORGANISATIONAL EFFECTIVENESS
IN MILITARY ORGANISATIONS

Background

1. While there has always been an interest in increasing effectiveness in organisations, widespread concerted efforts were first seen in the mid 1970's. These efforts came about because of an increasing awareness in the United States that productivity on a national level was steadily decreasing. The response was legislation in the form of public law 94-136 of 1975 to stimulate efforts to accurately measure productivity efforts and to encourage those efforts. The public law was followed by a defence instruction which was followed by individual instructions for the military services.

2. Katzell and others (1), and Guzzo and Bondy (2) summarised 207 productivity experiments (including military) for the period 1971-81. 87% of these experiments found evidence of improvement in at least one aspect of productivity. The interventions looked at in these studies included:

- a. Recruitment and selection;
- b. Training and instruction;
- c. Appraisal and feedback;
- d. Goal setting;
- e. Compensation;
- f. Work redesign;
- g. Supervisory methods;
- h. Organisational structure/design;
- i. Decision making;
- j. Changes in work schedules; and
- k. Sociotechnical interventions.

(1) Katzell, R.A., Bienitock, P., Faerstein, P.F. A Guide to Worker Productivity Experiments in the United States 1971-76. New York, New York University Press. 1977.

(2) Guzzo, R.A. & Bondy, J. A Guide to Worker Productivity Experiments in the United States 1976-1981. New York, Pergamon. 1983.

3. Guzzo and others (3) applied meta-analysis to 98 of the original 207 experiments (that did not omit needed data) and found:

- a. As a whole the 98 experiments significantly improved some concrete aspect of productivity by one-half a standard deviation.
- b. Programmes with the most powerful effects on productivity were those involving training and goal setting. Large scale sociotechnical interventions also showed greater than average impact. Programmes of work design and of appraisal and feedback had the next most powerful effects, followed by interventions involving schedules of work, supervisory methods and management by objectives. Even those weakest treatments had effects that were appreciable and statistically significant.
- c. The impact of interventions in government was substantially greater than that in other types of organisations.
- d. The productivity effects were markedly greater for managerial/professional workers.

4. Within military organisations in recent years there have been concerted efforts to develop methods to measure more precisely the impact of organisational interventions. These include:

- a. The development in a military environment (4) of a method using meta-analysis to translate findings into economically meaningful terms (rather than on psychological scales) in the form of the standard deviation of job performance in dollar terms.
- b. The development by T.C. Tuttle (5) of a methodology for generating productivity indicators.

(3) Guzzo, R.A., Jette, R.L. & Katzell, R.A. 'The Effects of Psychologically Based Intervention Programs on Worker Productivity: A Meta-Analysis'. *Personnel Psychology* 38. 1985, 275-291.

(4) Hunter, J.E. & Schmidt, F.L. 'Quantifying the Effects of Psychological Interventions on Employee Job Performance and Work-force Productivity'. *American Psychologist* 38, 1983. 473-78.

(5) Tuttle, T.C. *Productivity Measurement Methods: Classification, Critique, and Implications for the Air Force*. Air Force Human Resources Laboratory, Brooks Air Force Base, Texas. 1981.

- c. The development within the US Air Force (6) of an Organisational Assessment package used to gather research to strengthen the Air Force organisational effectiveness programme. The package looks at a variety of criteria including job satisfaction, organisational climate and perceived productivity. By 1984 the survey had been administered to 4,786 military and civilian personnel.
5. The 'wild card' among productivity enhancement methods has been the reported dramatic effects of using Quality Circles (group suggestion methods) in the US Army (7) and US Navy (8). In the case of the Army a return on investment in productivity of about 2 to 1 is reported.
6. The US Army developed an Organisational Effectiveness programme that trained more than 1,700 Organisational Effectiveness Staff Officers (OESO) to act as consultants and "... apply an integrated blend of knowledge and skills drawn from behavioural, management, systems sciences specifically tailored to meet the changing needs of the Army." (9)
7. Work by Broedling and others (10) has assessed manager's knowledge and perceptions of various management practices and leadership techniques by the use of a Management Techniques Inventory.
8. It is not intended to suggest that previous studies generalise across cultural backgrounds or even between organisations. What is suggested is that the studies provide clues to what areas are deserving of attention when considering the question of effectiveness and the range of methods used in an effort to enhance that effectiveness in the organisation. It also has to be remembered that techniques and interventions follow problems, not the other way around.

-
- (6) Hendrix, W.H. & Halverson, V.B. Organisational Survey Assessment Package for Air Force Organisations. Air Force Human Resources Laboratory, Brooks Air Force Base, Texas. 1979.
 - (7) Schneider, 'Organisational Behaviour' Annual Review of Psychology, 1985. p 600.
 - (8) Atwater, L. & Sander, S. Quality Circles (QCs) in Navy Organisations: An Evaluation. Naval Personnel Research and Development Center report TR 84-53, San Diego, 1984.
 - (9) Hayden, D.C. 'Training OESOs: A View of the Curriculum'. Army Organisational Effectiveness Journal, No. 1, 1985, 86-88.
 - (10) Broedling, L.A., Githens, W.H. & Reidel, J.A. Development of a Management Techniques Inventory. Navy Personnel Research and Development Center technical note 1977 (Apr) No. 77-12, San Diego, California.

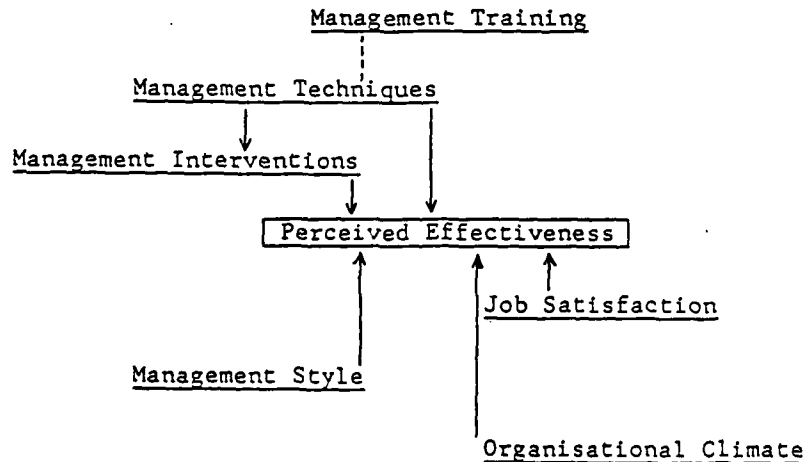
Aim

9. The proposed study will look at the effect of the use of management techniques on management interventions and perceived effectiveness. The more generally used criteria of job satisfaction, management style and organisational climate will also be studied in terms of their effect on perceived effectiveness. Assumptions being made are:

- a. Military organisations are in the forefront of using managerial interventions to increase effectiveness, but there is not always a concerted effort to measure programme impact.
- b. There is a tendency by military managers to resist the use of certain management techniques and civilian management experience as being inapplicable to the goals of military organisations.

Figure 1 depicts the relationships to be investigated in the study.

Fig. 1

Note:

Management Techniques used in the Model include:

Value analysis

Network analysis (Performance Evaluation and Review Techniques, Critical Path Method)

Management by objectives
Organisational Development
Divergent problem solving
Electronic spreadsheets
Quality circles
Others

Management Interventions referred to in the Model include:

Recruitment and selection
Training and instruction
Appraisal and feedback
Goal setting
Financial compensation
Work redesign
Supervisory methods
Organisational structure/design
Decision making
Work schedules
Sociotechnical interventions

Method

10. The proposed study will make use of attitudinal and perceptual measures in the form of a survey instrument consisting of scales and inventories. The survey instrument will be used to look at job characteristics; job satisfaction; supervision and management style; organisational climate; and the use of management interventions and management techniques. The effect of each of these will be measured against perceived effectiveness. Quantitative measures of job behaviour and system performance have not been used because measurement indicators have not yet been developed. The development of measurement indicators will be discussed in the thesis and a proposal made for the use of data from the POR/AMAN system to be used in constructing measurement indicators.

11. The survey questionnaire will be mailed to 280 Officers in the worn rank of Major and 100 Officers in the worn rank of Lieutenant Colonel. Survey questions will be pretested in a pilot study consisting of interviews with 30 Officers in the rank of Major and 10 Officers in the rank of Lieutenant Colonel in the Melbourne area. Officers for the main study will be selected at random (except for rank) using a list of random numbers. The ranks chosen for the study represent middle management in the Army.



DEPARTMENT OF DEFENCE



STRT

RUSSELL OFFICES
CANBERRA, A.C.T. 2600

IN REPLY QUOTE.

DCPERS 221/86

4 July 1986

HQ 3 MD

REQUEST FOR ASSISTANCE - LONG TERM STUDENT
63114 MAJOR R.C. FURRY

Reference:

A. HQ 3 MD 101/1/1 of 17 Jun 86

1. Approval is given for Major Furry to conduct a pilot study and further survey on organisational effectiveness as outlined in his letter of 17 Jun 86.
2. This approval is given on the basis that:
 - a. costs will be limited to the printing and distribution of questionnaires (using Departmental resources);
 - b. the project will be supervised by the District Psychology Officer, HQ 3 MD;
 - c. mailing lists will be provided by the Military Secretary's staff (Captain Judy Avery, Tel 653655) through the MS staff at HQ 3 MD.
DAVID SPIERS
3. Supervision of this project should give close attention to:
 - a. the measure of effectiveness. This must be primarily concerned with operational or war-fighting efficiency;
 - b. principle vs technique. Management training in the Army should, and does to a large degree, emphasise the application of principles rather than 'fashionable' techniques;

C-2

- c. management vs leadership. Army officers are expected to be leaders. Management and 'management style' must be seen as a component of the officer's skill as a leader.
4. A further suggested reference is attached.



P.R. PHILLIPS
Brigadier
Deputy Chief of Personnel - Army

Attachment:

1. Eaton N.K. et al 'Alternative Methods of Estimating the Dollar Value of Performance', Personnel Psychology, 1985, 38

ANNEX D



DEPARTMENT OF DEFENCE

RUSSELL OFFICES
CANBERRA, A.C.T. 2600

IN REPLY QUOTE:

DCPERS 64 / 87

2 March 1987

ORGANIZATIONAL EFFECTIVENESS STUDY

1. Major R. Furry, AA Psych, is currently completing a Masters Degree in Applied Psychology at the Melbourne University. A principal requirement for the degree is the submission of a thesis titled, "Organizational Effectiveness in Military Organizations".

2. The thesis topic has been approved by the Chief of Personnel and is being supervised by the District Psychology Officer, HQ 3 MD. A pilot survey has been completed using Officers in the Melbourne Area and the final study questionnaire is now ready for wider distribution. Consequently the Military Secretary has provided a mailing list of 380 randomly selected Majors and Lieutenant Colonels to assist in the study by completing the attached questionnaire. Total anonymity of respondents has been arranged to ensure the confidentiality of individual replies.

3. This study will provide an important source of information that should prove beneficial to the Army. It is therefore requested that you answer and return the questionnaire by the due date.

A handwritten signature in dark ink, appearing to read 'K.R. Phillips'.

K.R. PHILLIPS
Brigadier
Deputy Chief of Personnel - Army

3 - APR 1987

ANNEX E

Management Intervention Responses

Intervention that the organisation "makes the best use of"

<u>Intervention</u>	<u>Frequency</u>	<u>Per cent</u>	<u>Ranking</u>
Training & instruction	117	46.2	1
Appraisal & feedback	27	10.7	2/3
Supervisory methods	27	10.7	2/3
Goal setting	20	7.9	4
Organisation structure	16	6.3	5
Recruitment & selection	15	5.9	6
Work redesign	9	3.6	7
Work schedules	7	2.8	8
Decision making	5	2.0	9
Sociotechnical intervention	2	.8	10
Financial compensation	0	0	11

The single intervention "not well used"

<u>Intervention</u>	<u>Frequency</u>	<u>Per cent</u>	<u>Ranking</u>
Financial compensation	84	33.2	1
Sociotechnical interventions	57	22.5	2
Appraisal & feedback	20	7.9	3
Work redesign	19	7.5	4
Goal setting	17	6.7	5
Organisational structure	14	5.5	6
Decision making	13	5.1	7
Recruitment & selection	12	4.7	8
Supervisory methods	5	2.0	9
Training & instruction	4	1.6	10
Work schedules	3	1.2	11

Intervention that "receives most attention in own job"

<u>Intervention</u>	<u>Frequency</u>	<u>Per cent</u>	<u>Ranking</u>
Appraisal & feedback	55	21.7	1
Goal setting	47	18.6	2
Supervisory methods	35	13.8	3
Training & instruction	32	12.6	4
Work schedules	22	8.7	5
Decision making	20	7.9	6
Organisation structure	14	5.5	7
Sociotechnical interventions	10	4.0	8
Recruitment & selection	7	2.8	9
Work redesign	6	2.4	10
Financial compensation	0	0	11

Interventions respondents have "most experience in using"

<u>Intervention</u>	<u>Frequency</u>	<u>Per cent</u>	<u>Ranking</u>
Training & instruction	71	28.1	1
Appraisal & feedback	64	25.3	2
Supervisory methods	39	15.4	3
Goal setting	27	10.7	4
Decision making	15	5.9	5
Organisation structure	8	3.2	6
Sociotechnical interventions	7	2.8	7
Recruitment & selection	6	2.4	8
Work redesign	6	2.4	9
Work schedules	6	2.4	10
Financial compensation	0	0	11

ANNEX F

Career Intentions by Corps

<u>Corps</u>	<u>Continue</u>	<u>Retire</u>	<u>Resign</u>	<u>Open to offers</u>	<u>Total</u>
RAAC	11		1	4	16 (6.3%)
RAA	14	1	1	7	23 (9.1%)
RAE	13		3	7	23 (9.1%)
RA Svy	3		2	2	7 (2.8%)
RA Sigs	5	1	3	7	16 (6.3%)
RA Inf	28		6	16	50 (19.8%)
AA Avn	3		1	5	5 (2.0%)
Aust Int	2			2	4 (1.6%)
RACT	10		1	8	19 (7.5%)
RAAMC	4	1			5 (2.0%)
RAADC	2		1	2	5 (2.0%)
RAAOC	18		4	23	45 (17.9%)
RAEME	8			8	16 (16.3%)
RAAEC	1		2	4	7 (2.8%)
AALC	1				1 (0.4%)
RACMP	2			4	6 (2.4%)
AACC	1				1 (0.4%)
RAANC			1		1 (0.4%)
AABC	1				1 (0.4%)
	-----	-----	-----	-----	-----
	127	3	26	96	252
	50.4%	1.2%	10.3%	38.1%	100

ANNEX G

Questionnaire Detailed Factor Analyses

Item Loading Item Loading Item Loading Item Loading Item Loading

Job Inventory

<u>Meaningful Work</u>		<u>Freedom/ Autonomy</u>		<u>Task Accomplishment</u>		<u>Resources</u>		<u>Career Development</u>	
J02	.85	J25	.38	J25	.40	J24	.32	J01	.36
J11	.81	J15	.36	J15	.40	J08	.87	J18	.30
J20	.70	J13	.88	J10	.30	J07	.86	J22	.79
J01	.62	J03	.86	J18	.75	J06	.65	J21	.69
J25	.59	J14	.72	J19	.71			J23	.54
J15	.59	J10	.57	J16	.50				
J14	.30	J24	.37	J07	.56				
J10	.37	J04	.38	J04	.43				
J18	.30			J23	.32				
J16	.37								
J04	.36								

Supervision

<u>Assistance/ Feedback</u>		<u>Supervisor Strengths</u>		<u>Relations with Superior</u>		<u>Respect of Superior</u>	
018	.81	021	.80	020	.36	007	.39
014	.78	002	.79	022	.50	013	.41
019	.77	015	.76	004	.31	004	.33
007	.67	005	.71	025	.78	024	.47
001	.67	006	.70	026	.73	011	.82
013	.64	003	.67	027	.67	009	.82
017	.55	012	.61	008	.54	010	.71
020	.52	008	.37	024	.53		
022	.50						
004	.45						
027	.39						
010	.37						

Organisation Climate

<u>Pride in Organisation</u>		<u>General Organisation Climate</u>		<u>Organisation Strengths</u>		<u>Job Related</u>		<u>Contributions to Satisfaction</u>	
C12	.81	C06	.76	C10	.76	S08	.87	S04	.34
C08	.81	C07	.72	C13	.72	S11	.82	S10	.68
C03	.56	C14	.53	C05	.63	S09	.82	S01	.64
C07	.32	C01	.50	C11	.52	S04	.54	S05	.55
C01	.37	C04	.48	C02	.47	S07	.54	S12	.52
C04	.43	C11	.40			S02	.52	S06	.46
C02	.31					S05	.39		
						S06	.36		

Perceived Effectiveness

<u>Unit</u> <u>Performance</u>	<u>Unit</u> <u>Solidarity</u>	<u>Resource</u> <u>Shortfalls</u>	<u>Management</u> <u>Expertise</u>	<u>Quantity and</u> <u>Quality of</u> <u>Output</u>
SPERF .74	UPER .41	EQUIP .78	OQAN .39	ACOND .30
GMAN .70	MRES .32	SHORT .76	EMCON .74	AGOAL .41
UDEAD .67	TCON .37	TEXP .69	CFMAN .63	IQAN .75
UPRES .63	MATES .77		AGOAL .44	IQUAL .69
ACOND .60	TEAM .76			
QUAL .54				
UPERF .53				
MRES .49				
OQAN .48				
TCON .47				
TEXT .31				