

The Implementation of the Incident Control System in NSW: Span of Control and Management by Objectives

Jennifer Bean examines the Incident Control System in NSW to determine adoption of Management by Objectives and Span of Control principles.

By Jennifer Bean, University of New England.

Jennifer Bean conducted research using interviews and questionnaires on the implementation of 'management by objectives' and 'span of control' in the context of the Incident Control System (ICS) in NSW. The research found that objectives and strategies are being developed for every fire and communicated effectively to the Incident Management Team (IMT) but not to the field. In addition, the objectives being developed are not useful or meaningful and the process of reassessing objectives and strategies is not well understood by the IMT. The Incident Action Plan (IAP) is often not perceived as being relevant or useful to the incident, and preplans are not used extensively at incidents. Logistics are being duplicated by agencies rather than having one function for an incident, and duplication of tasks is occurring between the planning and operations sections. Span of Control is well understood and adhered to but not proactively reassessed.

Many of these issues can be resolved with interagency training/refresher exercises and standardised procedures (such as briefings, development of the IAP and planning meetings) to encourage agencies to implement ICS in the same manner.

The Incident Command (Control) System (ICS) is 'a set of personnel, policies, procedures, facilities and equipment, integrated into a common organisational structure designed to improve emergency response operations of

all types and complexities' (Irwin 1989). NSW fire agencies are currently using ICS, having adopted the system in 1987. Interwoven with ICS are the concepts of Management by Objectives (MBO) and Span of Control (SoC) in as much that they are the principles that the Australian version of ICS is based upon.

Management by Objectives is 'a process of consultative management where the management team determines the desired outcomes of the incident. These outcomes or objectives are then communicated to those' (AIIMS, 1994). MBO is important therefore, so that people know where they are, why they are there and what direction is being taken during the operation.

Span of Control is a concept that relates to the number of groups or individuals which one person can successfully supervise (AIIMS, 1994). The inference here being that if the SoC is exceeded supervision will be compromised and therefore the safety and effectiveness of subordinates is compromised as well.

Investigation of these two concepts can provide useful insights on how ICS is implemented in NSW. This paper looks at their adoption in NSW, and suggests recommendations for the future.

Methodology

Performance indicators were derived from the principles of ICS. Each performance indicator was given a 'measure' or 'measures', that were used to provide a focus or benchmark for research and analysis. Data was gathered on the measures, and conclusions were made on whether the performance indicator was achieved or not based on this information (Table 1).

Various techniques were used to collect data. The two questionnaires were used to obtain quantitative data to identify trends in implementation. They were sent to incident management team participants and crew leaders/crew members. Interviews were used to follow up the trends from IMT members and obtain more qualitative, detailed information on specific subjects. Operations Plans were analysed for inter-agency

Table 1: Performance Indicators, measures and methods used

	PERFORMANCE INDICATORS	MEASURES	METHOD
Management by Objectives	Joint planning of incident	<ul style="list-style-type: none"> • IAP is written and used • Objective is communicated • Preplanning 	IMT Questionnaire Field Questionnaire IMT Interview Operations Plans
	Unified command	<ul style="list-style-type: none"> • One organisational structure, one Incident Control Centre, one planning process, one logistics centre and one communications framework. 	Field Questionnaire
Span of Control	Unity of Command	<ul style="list-style-type: none"> • Everyone has one boss. 	IMT Questionnaire Field Questionnaire
	Duplication is avoided	<ul style="list-style-type: none"> • No duplication in tasks. 	IMT Interviews

arrangements and Rural Fires Act (1997) Section 44 reports were used to analyse the management of individual fires.

The responses were dominated by the Rural Fire Service and National Parks and Wildlife Service. NSW Fire Brigades participated in the research to a lesser extent because they are primarily an urban fire fighting organisation. State Forests declined to participate in the research.

1. Management by Objectives

Joint planning of the incident: Communication of the objective

For management by objectives to be effective, the incident objective needs to be communicated to all agencies and personnel involved in the incident. Crew leaders/crew members were asked if they knew the incident objective, 59% responded yes, 41% responded no. The results were identical when asked if they knew the strategies. It is evident from these results that the incident objective is communicated to the field only half the time. As Management by Objectives requires that all participants on an incident should know the objective, this principle is not being implemented as well as it should.

The Incident Management Team (IMT) results contrast with the field results. 100% of respondents said that an objective was set for the incident. 93% of respondents knew the objective and 7% didn't. This shows that the incident management team is given the objective and strategies. However the method of communicating the objective was not researched.

An objective should define what the Incident Controller wants to achieve in a particular timeframe. This objective should be realistic and achievable. To do this, an objective should have time and space parameters and an intent that is meaningful. An example of an objective may read, 'to contain the fire within the established

control lines by 2100 in order to protect Brown's village'. Cowardin (1984) refers to this as 'action centred Management by Objectives (MBO)', where an Incident Controller takes available information, and based on their experience, sets a single overall strategy including an objective for the emergency.

Often a person will not remember a piece of information because it is not directly relevant to them personally or their situation, or is not 'action centred'. 927 situation reports/incident action plans for the period 1997/1998 -1999/2000 were analysed. The objectives that occurred in this period can be summarised into categories, these are shown in Table 2.

Table 2 shows that not one objective was set with time and space parameters and an intent. The majority of objectives (34%) were generic statements that do not convey the incident specific goal. These generic statements can be considered as the overarching mission statements for all fire fighting, and are included in the BFMC Operations Plans as 'aims'. 27% of the objectives provided some details and guidance in that they contained what was to be done within a space parameter. 26% of the objectives however, only outlined what was to be done without any details on the parameters or intent, and 11% of the objectives weren't objectives at all, but strategies. The lack of detail and direction in these objectives makes them irrelevant and therefore difficult for subordinates to remember. Perhaps the communication of objectives to the field is occurring, but the objective is not meaningful enough for the subordinates to use or recall.

The objective and corresponding strategies should be reassessed regularly for relevance and achievability with the changing incident context. This process should be driven primarily by the Incident Controller and the planning section with consultation with the other sections. IMT members were asked whether the objectives and strategies were reassessed. 92% said

Table 2: Types of objectives occurring in 1997/98–1999/2000

OBJECTIVE	EXAMPLES	PERCENTAGE
Generic	To protect catchment values To protect biodiversity values To protect life and property To ensure the safety of crews	34%
Strategy	Patrol and mop-up the fire Inspect the fire perimeter Establish an accurate plot of the fire	11%
What	To minimise the area burnt To prevent re-ignition To contain and blackout the fire To prevent escape from the control lines To blackout the control lines To secure the control lines To mop-up the hotspots To monitor the fire	26%
What/space	To contain the fire within control lines To contain the fire to the current area	27%
What/time	To contain the fire by 1800 hours	2%

Table 3: ‘How was the objective and strategies reassessed?’

31%	Said they were reassessed following liaison and briefings from the field
19%	Identified IMT meetings reassessed the objective and strategies
17%	Identified that after weather reports, aerial inspections and field inspections the strategies/objective were reassessed
12%	Identified that planning meetings reassessed the strategies/objective
9%	Said that they were reassessed as the shift progressed
7%	Said that they were assessed for the next IAP/shift change

yes, 6% said no and 2% didn't know. Table 3 outlines how the objectives and strategies were reported as being reassessed.

Table 3 demonstrates that the process of reassessing objectives and strategies is not well understood. The Incident Controller is responsible for determining the objective, which sets the scene for the incident, and provides everyone on the incident with a 'direction'. Not one person responding to the questionnaire identified the Incident Controller carrying out this role or having this responsibility.

The primary forum for reassessing strategies (and the objective) is via the planning meetings. All functional officers should be present for this meeting, and should analyse the intelligence from the field and other sources to assess the success of activities and the relevance of the strategies. The responses reflect the different components and triggers of assessment, but only 12% specifically identified the importance of the planning meetings.

The objective of an incident therefore, is being communicated well to the IMT, but less so to members in the field. The process of reassessing objectives and strategies is not well understood.

Joint planning of the incident: Incident action plan development and use

An Incident Action Plan (IAP) is the primary tool used to communicate the objective of the incident to all staff involved. IMT members were asked whether there was an IAP for a nominated fire on which they had participated. 93% said yes, 7% said no. They were then

asked if an IAP was developed for each shift. 83% said yes, 14% said no and 3% didn't know. The 93% positive response is not surprising, as an IAP is a reporting mechanism required by most agencies and the Rural Fire Service Commissioner (for s44 incidents).

IMT members were asked if they used the IAP to carry out their role. The results are shown in Table 4.

Table 4: ‘Did you use the IAP to carry out your role?’

13%	Said never
4%	Said rarely
23%	Said sometimes
25%	Said frequently
34%	Said always

Table 4 shows that 40% of the respondents said that they used the IAP sometimes, rarely or never. As the IAP is the basis for Management by Objectives, this response is surprising. It shows that either the role and usefulness of the IAP is not well understood, or that the IAPs being written are not useful and are therefore not being used.

The purpose of an IAP is to communicate the objective, strategies and support mechanisms provided for a fire. If the plan is not useful and relevant then the purpose of the plan is negated. Interview participants were asked if the IAP was useful. 39% responded no, 61% responded yes. It was reported that the three main reasons for the usefulness of the plan was that it was a form of

Table 5: 'Why wasn't the incident action plan useful?'

56%	Felt the IAP didn't reflect the field operations.
33%	Felt that the field (or operations section) does what they want regardless of an IAP.
11%	Felt that the IAP was too prescriptive and outlined tactics

Table 6: 'What preplanning was evident at the incident?'

34%	Identified the Operations Plan
19%	Said that there were agency databases and management plans
17%	Said that there was rapport between agencies and interagency contact through the BFMC forum, inter-agency training or previous incidents
13%	Said that agency staff were trained and experienced
9%	Referred to internal agreements (such as professional officer awards) and standard operating procedures
6%	Identified control lines such as trail maintenance and hazard reductions
3%	Identified the DISPLAN

Table 7: 'Why was the preplanning useful?'

24%	It saved time
18%	The preplanning identified positions and people
18%	There were non-locals involved who benefited from the preplanning
12%	It summarised local information
12%	Preplanning assisted team cooperation and lessens conflict by outlining the ground rules
6%	It improved response
6%	People knew their roles

documentation, it gave clear direction and it was a measure of progress and performance. Table 5 outlines the reasons why the 39% that felt the IAP wasn't useful.

The results in Table 5 demonstrate that when the IAP is not used it is generally because the information in the plan wasn't useful (56%). If the IAP is useful, Management by Objectives (using the IAP as a tool) should be implemented by everyone. 33% of the reasons were that the field 'does what they want' because they do not participate in process to set the objectives. This can be remedied with training and use in ICS roles and responsibilities.

In summary, there are two primary problems associated with the objective setting process. These are that although the IAP is being written, the communication of the objectives to the field and IMT is not widespread or equitable, nor is monitoring of the achievement of the objectives and subsequent feedback occurring.

Joint planning of the incident: Pre-planning

Multi-agency pre-planning is an important tool in assisting the establishment of objectives and the development of the IAP (Riley, 1988). Each agency should have a good understanding of their neighbour's concerns and ideals, available qualified personnel and available resources before a major incident. Pre-planning can take many forms, IMT members were asked what pre-planning was evident at the incident they participated in. The results are shown in Table 6.

In NSW, the main sources of information should be the BFMC Operations Plan and agency management plans (e.g. NPWS Plans of Management, Reserve Fire Management Plans).

- The Operations Plan is a standard document for each bush fire district in the State, outlining procedures and protocols, and identifies resources, communications and assets at risk. It should be routine for the IMT to access the Operations Plan to identify any issues. In Table 5 only 34% referred to Operations Plans.
- Agency documents outline area specific information including assets, procedures and relevant legislation. Only 19% referred to these sources of information. These plans should be consulted during incidents in those areas to assist in the rapid identification and prioritisation of tasks.
- The BFMC is a forum that can establish rapport and understanding between agencies and performs a valuable role in facilitating pre-planning. Only 17% reported that these forums fulfilled a pre-planning role.

Compiling information into documents for an incident is only a valuable exercise if the information and format can be used and accessed rapidly. IMT members were asked if the pre-plans they used were useful and why. 65% said yes, the usefulness of pre-planning is outlined in Table 7.

The responses in Table 7 are generally referring to the Operations Plans. The Operations plans are now required to identify people and roles they can fill during an incident, and outlines the 'ground rules' for command, control and cooperation.

Of the other responses, 10% said they weren't sure if the pre-planning was useful, 10% said pre-planning was not useful and 15% said there was no pre-planning evident at the incident. 20% of the respondents therefore were ambivalent or negative about the use of pre-planning. This result could stem from the



National Emergency Management Coordination Centre, EMA.

pre-planning not being in a useful format/not containing relevant information or from the participant not understand how pre-planning can benefit incident management. All BFMCs have Operations Plans approved by the Coordinating Committee, these plans should therefore be used as the minimum form of pre-planning. There is no justifiable reason why these plans were not present at incidents (15%).

The information provided by respondents shows that the use of pre-planning is not occurring consistently. Although the value of pre-planning is recognised, the pre-planning tools identified were not varied or many in number.

Unified command

Irwin (1989) defines unified command as a method for all agencies or individuals who have jurisdictional responsibility, or in some cases who have functional responsibilities at the incident, to contribute to the:

- determination of overall objectives for the incident, and
- selection of strategies to achieve the objectives.

Irwin (1989) suggests that by all agencies using ICS during a major incident (and therefore having the same organisational structure, same terminology, same management procedures), unified command occurs. This means that instead of preparing several sets of plans (with no guarantee of coordination among them), only one set need be prepared to inform all participants. In place of several logistical and communications processes, only one system of collective and integrated procedures is used. The Australian ICS does not specifically include the concept of 'unified command', NSW addresses the components of unified command

in its pre-planning policy for coordination. For the purposes of this research, the American five ICS characteristics (one organisational structure, one Incident Control Centre, one planning process, one logistics centre and one communications framework) are used as measures of unified command.

It is evident that the ICS roles and structure are being filled. The IMT questionnaire results showed that the five characteristics of unified command were generally occurring at every fire. The particular jobs undertaken varied between responses, however the core tasks were reported as being carried out, such as 'management of the section' for IMT Officers. The survey responses were quite simplistic (often identifying one task). This may be a function of the amount of space provided for respondents (4 lines).

Generally the reporting structure was theoretically correct. All respondents who were IMT Officers knew that they reported to the Incident Controller. The positions reporting to the IMT Officers varied considerably. Some responses included:

- Division Commander reports directly to Deputy Appointee.
- Crew Leaders report to Division Commander.
- Crew Leader reports to Operations Officer.
- Planning Officer reports to Appointee.
- Planning Officer reports to Operations Officer.
- Logistics Officer reports to Planning Officer.
- Logistics Officer reports to Operations Officer.
- Operations Officer reports to Planning Officer.

21% of the respondents outlined reporting structures that did not correspond with the theoretical ICS structure. There was no agency-based trend in these results. This shows that there is either a considerable lack of understanding of the reporting structure and roles of the positions, or that the structure is being adapted to local conditions. Either response will have the disadvantage of inconsistencies and non-standardisation. Correspondingly, there could be advantages if the variations were agreed to by the agencies and were due to adaptation to local circumstances.

It is interesting to note the range of responses from the Incident Controllers. When asked who they reported to, the responses included:

- The local Council General Manager;
- RFS Regional Manager;
- NPWS (District, Region) Manager;
- The s44 Appointee;
- Rosehill/RFS State Operations;
- A 'Higher Authority';
- RFS Commissioner; and
- NPWS Park Operations.

Table 9: 'Why did you reassess the span of control as a manager?'

30%	They needed more staff
30%	They had too many staff to do the job
20%	They accept everything initially and then reassess the span of control
20%	They reassess span of control always and implicitly

Table 10: 'How did you know if the span of control was enough?'

33%	Reported that if the job was being done, the span of control was correct
26%	Said that the span of control depended on the objectives, strategies and tactics (e.g. mop up span of control could be 1:8, direct attack span of control could be 1:3)
26%	Said they used the 1:5 proportion as a basis for decision making but took into account other factors
11%	Reported that they kept strictly to the 1:5 proportion
4%	Reported that if they couldn't manage their staff properly the span of control was likely to be wrong

This shows that there is some confusion about the reporting structure above the Incident Controller. Ultimately, an Incident Controller appointed under s44 of the Rural Fires Act primarily reports to the Commissioner of the Rural Fire Service, and maintains liaison with all other concerned parties.

One incident control centre is required by Coordinating Committee policy via the Operations Plans for all Class 2 and 3 fires. The control centre is agreed on by the local Bush Fire Management Committee in the Operations Plan and is generally the Rural Fire Service Control Centre. All section 44 reports identified that one control centre was used for the major incidents. There may be some overlap and confusion of control centres for Class 1/Class 2 fires on public managed land (such as National Parks and Wildlife, State Forests) as they are escalating. This was not researched.

53% of interviewees said that logistics were organised on an agency basis. 47% said that the incident management team's logistics section organised the logistics for the incident. When asked why the agency organised their own logistics, the overwhelming response was that different agencies have different needs and therefore need to be organised separately. One issue that was raised a number of times was the issue of 'rich cousin – poor cousin'. This means that one agency was perceived

to have received good accommodation and feeding, while another agency received different arrangements that were perceived to be worse, and therefore not equitable. This is an inherent problem associated with different agencies organising their own logistics.

All changeovers were reported as being scheduled by the IMT, but organised by each agency by swapping their own resources with like resources. The IMT in every instance changed over together regardless of agency. A number of respondents (20%) raised the issue that there are often different shift times for different agencies because of the volunteer-paid firefighter concept. Volunteers work flexible and often different hours compared to a paid workforce with an award. These hours and conditions were not researched in this study. The implications of different hours and conditions of volunteer fire fighters to paid fire fighters (with an award with set working conditions) could be considerable, not only in terms of coordination and logistics of the actual incident, but for occupational health and safety requirements.

Unified command is therefore being carried out well as a result of the ICS hierarchy and the existing policy framework. Establishing one control centre and one planning process is a routine and normal practice. Areas where there is some variation are related to the ICS structure, lines of reporting, and logistics/changeovers. In addition, logistics and changeovers need to be proactively incorporated into the IMT and organised across agencies.

2. Span of Control

Assessment of Span of Control

During interviews, IMT members were asked if they reassessed the Span of Control in their section as a manager. 65% responded yes, 35% responded no. Table 9 outlines the reasons that people said that they reassessed the Span of Control.

Table 9 shows that 60% of the participants reactively managed Span of Control, that is, when the situation was too difficult or too easy, the Span of Control and structure was reassessed. 20% reported a philosophy of accepting all resources initially and assessing the required Span of Control and structure. This approach may have serious implications for cooperative fire fighting on a state-wide basis. Often when there is severe fire weather, fires will be occurring across the State, resources will be shared and allocated on an as needs basis. As resources are finite, accepting everything initially will freeze the resources from attending another fire and contribute to the potential loss of assets. Span of control should proactively assess each shift both on current and predictive basis, because reactive or opportunistic management may result in delays and confusion.

Of the people who responded in the negative to the question 'as manager, did you reassess the Span of Control in your section?', 66% said the structure and Span of Control was acceptable and didn't need reassessing. This corresponds to the results that show that the majority of people are reactive in reassessing Span of Control. 17% said the structure was standard and non-negotiable, and 17% said it was someone else's job to reassess the Span of Control.

To determine how Span of Control is interpreted and implemented in an incident, IMT members were asked 'How did you know if the Span of Control was enough?' Table 10 outlines the results.

At emergency incidents, the environment in which supervision is required can rapidly change – possibly with dangerous consequences. Five reporting groups or individuals are considered to be the optimum, as this maintains a supervisor's ability to effectively task, monitor and evaluate performance. The results in Table 10 reflect this theory, the majority of people (63% of people interviewed) look at the task and the environment and make a judgement on how well subordinates can do the job, how safe the environment is and how well they can supervise them. Managing staff based on a designated ratio is limiting and inefficient, the ratio should be used as a guide only.

To gain an understanding how Span of Control is being implemented within the ICS structure, participants were asked 'How would you have expanded/reduced the Span of Control in your section?'. The results are outlined in Table 11.

Table 11 shows that less than half of the people interviewed understand the chain of command and process to expand/reduce the Span of Control. The correct method is to discuss the resources required in an IMT forum, the IC to approve the decisions and the Logistics Officer (and Operations Officer) to carry out the required actions. The 15% who responded that they would report the proposal to the Operations Officer were all Division Commanders and therefore identified the correct chain of command.

It is of concern that 23% of the respondents would go via their agency channels rather than the IMT and logistics function. The IMT will never exhibit true cohesion and efficiency until the IMT carries out all functions. Separate agencies duplicating logistical arrangements is inherently inefficient.

Unity of Command

Unity of Command is important – if every person on the incident reports to one person, and receives one set of instructions, duplication and confusion is avoided. This concept is being implemented well at fires in NSW:

Table 11: 'How would you have expanded/reduced the span of control in your section?'

50%	Outlined that the IMT discusses it, the Incident Controller approves the decision and the logistics officer does it.
23%	Reported that they would have contacted their agency to organise it
15%	Reported that they would report the proposal to the Operations Officer
8%	Felt that the planning section organises the reduction/expansion of resources through the IAP
4%	Felt that the field carried out the reduction/expansion as required

Table 12: 'What duplication was evident in the IMT?'

50%	Responded that the operations section and planning section exhibited duplication of tasks
14%	Said that it was human nature for there to be duplication
9%	Reported that the deputy Incident Controller also acted as an operations officer for their own agency
9%	Reported that there were too many resources for the job
4%	Reported blurring of roles such as agency liaison and planning officer
4%	Reported that there were two operations officers (one for NPWS, one for RFS)
4%	Said that the field set their own strategies

- 100% of the crew leaders/crew members knew who they reported to.
- 98% of IMT members reported to one person. The 2% reported that as Divisional Commander they reported to the Operations Officer and Incident Controller.

These results demonstrate that the hierarchy of ICS, particularly in the field, is well understood and accepted. This result can be attributed in part to the level of training people have received in the last five years in lines of communication and chain of command. The Rural Fire Service and NSW Fire Brigades system reinforces this reporting structure with their brigade structures.

Duplication of effort

Duplication of effort can cause inefficiencies in the management of an incident, while a structure with designated roles and responsibilities can remove the

potential for duplication of effort. Although strongly linked with the concept of Unity of Command, duplication of effort can occur as a result of many influences. During the interview, participants were asked if duplication of effort was evident in the IMT, 80% responded yes, 20% responded no. Table 12 outlines the type of duplication that was evident.

Table 12 shows that duplication of IMT roles and tasks is widespread. Overwhelmingly, the planning and operations functions showed duplication of tasks (50%) including both sections carrying out separate mapping; the operations officer not participating in the planning process and the planning section writing the operations plan; resource tracking being done by logistics, operations and planning; and having the operations officer and planning officer both trying to fulfill the operations function.

Another strong trend (13% of respondents) alluded to operations being divided into agencies (such as the Deputy Incident Controller acting as operations officer for their agency, and having operations officers for each agency). This may be a method to ensure that command is maintained and cooperation is facilitated, although it doesn't strictly adhere to the principles of Span of Control.

14% of participants accepted duplication and inefficiency as a part of normal practice. During an incident, the Incident Controller should manage the staff to ensure that staff are carrying out their roles and that inefficiencies do not occur.

Duplication of effort is occurring on a regular basis during incidents. The interactions between the different sections should be strong and open, if the communication is not strong, duplication of effort may occur. Duplication of effort is inefficient, it can also cause confusion and ill-feeling between agencies because cooperation and trust are not being actively facilitated through the ICS process. The reasons are not well known, but may be linked to agency politics and the tussle for control of an incident.

Conclusions and Recommendations

1. Management by Objectives

Although the objective and strategies for the incident are being developed by the IMT, they are not effectively communicated to the field operations staff. An inter-agency standardised approach to briefing should be adopted to ensure that the objectives and strategies are communicated to the fireline in a consistent, timely and effective manner. The IAP should be used as the basis for this briefing. Communication of the objective and strategies within the Incident Management Team is reported as good.

The low reporting rate in the field may be due to the lack of a meaningful and useful objective. Overwhelmingly, the objectives in this study period were broad and not 'action-centred'. Refresher courses and exercises should stress the importance of Planning Meetings and exercise the process of IAP development and briefing procedures.

The process of reassessing objectives and strategies is not well understood by IMT members. In theory, the planning meeting brings together the Section Officers to discuss and agree on strategies, and the Incident Controller has the responsibility for determining the objective. The results from this research failed to identify an understanding of these key responsibilities and processes.

Although the IAP is being developed and distributed to the IMT, its usefulness or relevance is variable. The key issues are that the information is out of date, it does not reflect the situation on the ground or what the field officers believe is required. Agencies are generally adhering to the strategies outlined in the IAP. Specific training for the Planning section needs to address the timeframes and processes involved in developing an IAP and the operational staff need to be specifically briefed to provide field information to ensure the IAP is based on accurate intelligence.

Although pre-planning is occurring, the plans are not being used at incidents. A checklist of 'essential information' needs to be included in the Operations Plan for the use of the Incident Controller and planning section. Obviously these plans are not included in the Operations Plan, but the checklist would ensure that important information in pre-plans are not overlooked. The checklist could include:

- Relevant legislation.
- Local Bush Fire Management Committee Operations Plan.
- Local Bush Fire Management Committee Bush Fire Risk Management Plan.
- Contact lists for all agencies .
- Plans of Management for National Parks in the local government area.
- Fire Management Plans for National Parks in the local government area.
- State Forest Plans of Management.
- Department of Land and Water Conservation Crown Land Fire management Plans.
- Topographic maps for the local government area.
- Vegetation maps for the local government area.
- Environmental and community assets map.

Preplanning also includes other factors such as fruitful discussion in the BFMC. A list of items for discussion

could include: training and experience of current key IMT staff, resource availability updates, location of areas of high fuel loads, fire trail capability, smoke sighting arrangements, first response arrangements, location of specific environmental and cultural assets. Although many of these issues are outlined in the Operations Plans, discussion prior to the fire season could be a timely and useful process to raise the members' awareness and focus.

Unified command seems to be working well (i.e. there is a common operations centre and common planning) but common logistics is not occurring. Currently, for over half of the fires studied, the logistics function is duplicated on an agency basis, consequently logistics is seen as ineffective and inequitable. A logistics team provided with adequate information on resources and needs, can satisfy most requirements. One of the most prevalent responses to not standardising logistics and changeovers was the concept of 'different agencies, different needs'. As ICS was developed and adopted as a tool to reduce duplication and encourage coordination of fire management, this attitude needs to be discussed and resolved in a pre-fire season forum at a local and Coordinating Committee level.

Reporting structures are not well understood. The purpose of a hierarchy is that all aspects of an incident are being considered and addressed. If the hierarchy or reporting structure has a weak link, the likelihood of potential failure or something being missed increases. Training and exercises are integral to ensuring that people respond and perform in an agreed and appropriate fashion to incidents. Refresher courses and exercises need to reassert what the roles and responsibilities are and why the chain of command is the way it is. These exercises need to be varied, regular and involve all agencies that may participate in fire management.

2. Span of Control

The concept of Span of Control is deceptively simple. In theory it provides a mechanism for coordinating the efforts of all areas involved through delegation of authority and responsibility. Indeed, one measure of Span of Control, Unity of Command, is being implemented well, when everyone has one boss, they know who they are, they know the lines of communications and authority and they can perform their allocated tasks. Training is required to encourage the on-going maintenance of Span of Control during an incident. This training should focus on proactive and predictive resource management, and be targeted at people who may fulfill the role of a Section Officer and Incident Controller.

As managers however, understanding how to facilitate Span of Control is a little more difficult. IMT members interviewed report on the overwhelming trend to

reactively assess Span of Control rather than assess it as part of a proactive management system. The actual assessment of Span of Control is refreshingly flexible, with people focusing on many contributing factors such as the level of safety, the task at hand and the competency level of staff to carry out the task. The 1:5 ratio is being used generally as a guide, not a rule.

Almost one quarter of people felt that they would go through their agency channels rather than a IMT/Incident Controller/Logistics Section process to reduce or expand the Span of Control. This process would generate inefficiencies and confusion, and is alien to the concept of Span of Control in that coordination would not occur.

Duplication generally has been reported to be occurring as the norm rather than the exception during fires. The main form of duplication is occurring between the planning and operations sections. The reasons are not well known, but may be linked to inter-agency politics and the issue of in-control arrangements. For this reason, agencies may need to discuss these issues on both a local and statewide basis. Further training could occur to restate the roles of each of the operations and planning sections, and their links with other sections and reduce the amount of duplication occurring during an incident.

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Jennifer Bean currently works for NSW National Parks and Wildlife Service as Senior Ranger (Fire). She has also held positions in the NSW Rural Fire Service in planning roles in the Northern and Central Regions. This paper is based on a chapter from her Master of Natural Resources thesis titled *The Implementation of the Incident Control System in NSW*. Email: bjtblunden@hotmail.com