

## ***5. Fire Complexity Analysis***

*Definitions of the five levels of wildland fire incidents, initial attack Type 5 to Type 1. A decision making format for analyzing an incident's complexity and determining the type of incident management organization required.*

## 5. Fire Complexity Levels

Definitions of the five levels of wildland fire incidents, initial attack Type 5 to Type 1. A decision making format for analyzing an incident's complexity and determining the type of incident management organization

The agency administrator is responsible for determining the complexity of a wildland fire incident and assigning qualified personnel to its management. Many factors determine the complexity of an incident, including area involved, threat to life and property, political sensitivity, organizational complexity, jurisdictional boundaries, values at risk, fire behavior, strategy and tactics, and agency policy. The agency administrator must understand the basic elements of incident complexity in order to recognize the magnitude of an actual or potential situation and make appropriate decisions regarding its management.

The following guidelines will assist the agency administrator in determining incident complexity. The guidelines are presented in order of ascending complexity and describe the fire suppression response and fire organization that are appropriate to the situation and consistent with fire management direction. The Type 5 incident is the lowest level of complexity formally recognized in the Incident Command System (ICS); the Type 1 incident is the most complex. Type 5 through Type 1 incidents have uniform national standards for personnel qualifications established in the ICS and described in the Wildland Fire Qualifications Subsystem Guide Handbook 310-1. Incidents Type 5 are among the most common. These incidents are considered any which require no more than five personnel to manage. Agency standards are established for qualifications of incident commanders for incidents.

### A. Incident Descriptions

#### 1. Type 5 Incident

- a) Resources required are local and typically vary from two to six firefighters.
- b) The incident is generally contained within the first burning period and often within a few hours after resources arrive on scene.

#### 2. Type 4 Incident

- a) Command staff and general staff functions are not activated.
- b) Resources are local and vary from a single module to several resources.
- c) The incident is usually limited to one operational period in the control phase.

d) No written incident action plan (IAP) is required. However, a documented operational briefing will be completed for all incoming resources.

### **3. Type 3 Incident**

a) Resources are usually local and some or all of the command and general staff positions may be activated, usually at the division/group supervisor and/or unit leader level. Units may have a predetermined Type 3 organization designated.

b) Type 3 organizations manage initial attack fires with a significant number of resources, an extended attack fire until containment/control is achieved, or an escaped fire until a Type 1 or 2 team assumes command.

c) Initial briefing and closeout are more formal.

d) Resources vary from several resources to several task forces/strike teams.

e) The incident may be divided into divisions.

f) The incident may involve multiple operational periods prior to control, which may require a written Incident Action Plan (IAP).

g) A documented operational briefing will be completed for all incoming resources, and before each operational period. Refer to *Incident Response Pocket Guide* for outline.

h) Staging areas and a base may be used.

i) By completing an Incident Complexity Analysis, a fire manager can assess the hazards and complexities of an incident and determine the specific positions needed (e.g., if sensitive public/media relationships are evident, then an information officer should be ordered as part of the team).

j) When using a Type 3 organization or incident command organization, a manager must avoid using them beyond the Type 3 complexity level.

k) A Type 3 IC will not serve concurrently as a single

### **4. Type 2 Incident**

a) A Type 2 team can be ordered in a short or long configuration. The national standard configuration is the same for all teams. GACCs may adjust the makeup of teams for use in their areas.

- b) The incident extends into multiple operational periods.
- c) Operations personnel often exceed 200 per operational period and total personnel will usually exceed 500 (numbers are guidelines only).
- d) A written action plan is required for each operational period.
- e) Many of the functional units are needed and staffed.
- f) The agency administrator will have regular briefings, and ensure that WFSAs and delegation of authority are updated.
- g) Divisions established for span of control are usually established to geographically facilitate work assignments.

## **5. Type 1 Incident**

A Type 1 incident meets all the characteristics of a Type 2 incident, plus the following:

- a) All command and general staff positions are activated.
- b) Operations personnel often exceed 500 per operational period and total personnel will usually exceed 1,000 (numbers are guidelines only).
- c) Divisions are established requiring division supervisor qualified personnel.
- d) May require the establishment of branches.
- e) Aviation operations often involve several types and numbers of aircraft.

## **B. Wildland Fire Incident Complexity Analysis**

More than 95 percent of all unwanted wildland fires are controlled in the initial attack or extended attack stages with local resources. When the initial management response is unsuccessful, the agency administrator must complete a wildland fire situation analysis to evaluate alternatives and select a new strategy for managing the fire. It is at this stage, and based on the WFSA selected alternative, that a comprehensive analysis of incident complexity should be made to determine the level, or type, of team to manage the implementation of the strategy indicated by that alternative. The decision to be made is usually between a Type 1 or Type 2 incident management team, weighing the complexity characteristics of the actual incident or its potential against recognized capabilities and limitations of the types of teams.

The following represents factors contributing to incident complexity. The responsible agency administrator and staff should analyze each factor specific to the actual or potential circumstances of a wildland fire incident. The summary of that analysis should serve as a guideline to identify the complexity level of the fire and assign the appropriate type of incident management

organization to it. Since the time required to assemble and transition an incident management team to a fire may be as much as 24 hours, this analysis should consider both the current state of the fire and its probable state in 24 hours under the influences of burning conditions and current management organization.

**Incident:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Evaluator:** \_\_\_\_\_

<b>Incident Complexity Analysis (Type 3, 4, 5)</b>		
<b>Fire Behavior</b>	<b>Yes</b>	<b>No</b>
Fuels extremely dry and susceptible to long-range spotting or you are currently experiencing extreme fire behavior.		
Weather forecast indicating no significant relief or worsening conditions.		
Current or predicted fire behavior dictates indirect control strategy with large amounts of fuel within		

planned perimeter.		
<b>Firefighter Safety</b>		
Performance of firefighting resources affected by cumulative fatigue.		
Overhead overextended mentally and/or physically.		
Communication ineffective with tactical resources or dispatch.		
<b>Organization</b>		
Operations are at the limit of span of control.		
Incident action plans, briefings, etc. missing or poorly prepared.		
Variety of specialized operations, support personnel or equipment.		
Unable to properly staff air operations.		
Limited local resources available for initial attack.		
Heavy commitment of local resources to logistical support.		
Existing forces worked 24 hours without success.		
Resources unfamiliar with local conditions and tactics.		
<b>Values to be protected</b>		
Urban interface; structures, developments, recreational facilities, or potential for evacuation.		
Fire burning or threatening more than one jurisdiction and potential for unified command with different or conflicting management objectives.		
Unique natural resources, special-designation areas, critical municipal watershed, T&E species habitat, cultural value sites.		
Sensitive political concerns, media involvement, or controversial fire policy.		

**If you have checked “Yes” on 3 to 5 of the analysis boxes, consider requesting the next level of incident management support.**

### Guide to Completing the Incident Complexity Analysis (Type 1, 2)

Incident: \_\_\_\_\_

Date: \_\_\_\_\_ Evaluator: \_\_\_\_\_

- 1) Analyze each element and check the response, Yes or No.
- 2) If positive responses exceed, or are equal to, negative responses within any primary factor (A through G), the primary factor should be considered as a positive response.
- 3) If any three of the primary factors (A through G) are positive responses, this indicates the fire situation is or is predicted to be of Type 1 complexity.
- 4) Factor H should be considered after numbers 1–3 are completed. If more than two of the items in factor H are answered yes, and three or more of the other primary factors are positive responses, a Type 1 team should be considered. If the composites of H are negative, and there are fewer than three positive responses in the primary factors (A-G), a Type 2 team should be considered. If the answers to all questions in H are negative, it may be advisable to allow the existing overhead to continue action on the fire.

<b>Incident Complexity Analysis</b>	<b>YES</b>	<b>NO</b>
<b>A. Fire Behavior</b> (Observed or Predicted)		
1. Burning index (from on-site measurement of weather conditions) predicted to be above the 90% level using the major fuel model in which the fire is burning.		
2. Potential exists for extreme fire behavior (fuel moisture, winds, etc.).		
3. Crowning, profuse or long-range spotting.		
4. Weather forecast indicating no significant relief or worsening conditions.		
Total		
<b>B. Resources Committed</b>		
1. 200 or more personnel assigned.		
2. Three or more divisions.		
3. Wide variety of special support personnel.		
4. Substantial air operation which is not properly staffed.		
5. Majority of initial attack resources committed.		
Total		
<b>C. Resources Threatened</b>		
1. Urban interface.		
2. Developments and facilities.		
3. Restricted, threatened, or endangered species habitat.		
4. Cultural sites.		
5. Unique natural resources, special-designation areas,		

wilderness.		
6. Other special resources.		
Total		
<b>D. Safety</b>		
1. Unusually hazardous fireline construction.		
2. Serious accidents or fatalities.		
3. Threat to safety of visitors from fire and related operations.		
4. Restrictions and/or closures in effect or being considered.		
5. No night operations in place for safety reasons.		
Total		
<b>E. Ownership</b>		
1. Fire burning or threatening more than one jurisdiction.		
2. Potential for claims (damages).		
3. Different or conflicting management objectives.		
4. Disputes over suppression responsibility.		
5. Potential for unified command.		
Total		
<b>F. External Influences</b>		
1. Controversial fire policy.		
2. Pre-existing controversies/relationships.		
3. Sensitive media relationships.		
4. Smoke management problems.		
5. Sensitive political interests.		
6. Other external influences.		
Total		
<b>G. Change in Strategy</b>		
1. Change in strategy to control from confine or contain		
2. Large amounts of unburned fuel within planned perimeter.		
3. WFSA invalid or requires updating.		
Total		
<b>H. Existing Overhead</b>		



1. Worked two operational periods without achieving initial objectives.		
2. Existing management organization ineffective.		
3. Overhead overextended mentally and/or physically.		
4. Incident action plans, briefings, etc. missing or poorly prepared.		
Total		