

DV 100

German Regulation 100

Leadership and Command in Emergency Operations

Command and Control System

Translation of the German regulation:

Dienstvorschrift 100

Führung und Leitung im Einsatz

- Führungssystem –

Diese Übersetzung der FwDV 100 wurde vom Ausschuss für Feuerwehrangelegenheiten, Katastrophenschutz und zivile Verteidigung (AFKzV) auf der 20. Sitzung am 12.09.2007 in Hamburg als autorisierte Fassung freigegeben und zur Verwendung empfohlen.

This translation of the german regulation was authorised by the board of fire fighting affairs, catastrophe protection and civil protection (AFKzV) at the 20th Session on 12. September 2007 in Hamburg and is recommended for all international using.

Remark on the translation

The regulation DV 100 describes the German incident command system that has been developed according to the German federal constitution and the responsibility of the federal states for emergency response. This regulation is therefore open for interpretation and modification required for local and regional emergency response particularities in the German federal states. Some of the rules and regulations might be difficult to understand without being familiar with the federal concept of emergency response.

Initially this regulation was designed to be a Fire Service Regulation. Thereafter it was extended as a general regulation used by most organisations and authorities involved in large scale emergency operations. This is why both versions “Fire Service Regulation 100” or “Regulation 100” exist.

This translation is focused on the main objectives and the general aims of the regulation. It shall give an overview and understanding of the principles of the German Command and Control System. The English version is not a complete word for word translation and has been shortened, where reasonable, to facilitate understanding.

The German text comprises both, the masculine and the female gender terms. In order to keep the sentences uncluttered and easy to read, this translation has been written only using the masculine gender. This usage is solely applied to this text for the purpose of brevity. It is not intended to discriminate the other gender.

Introduction

Nationally unified fire service regulations (in German: FwDV) are established to achieve uniform conduct at all fire services within all federal states. The aim of fire service regulations is to bring about the necessary uniformity of conduct within the fire service activities and to ensure them for the future. They are valid for both, missions and training.

This fire service regulation 100 “Leadership and Command in Emergency Operations” regulates basic principles for the German incident command system. It describes a command system which designates and elaborates the command organization, the command process and the according means. This shall facilitate a structured continuous development of the command organization which is well adapted for any case of damage and danger. This ranges from the daily and common missions of a single unit to large scale missions at extensive incidents.

The regulation will ensure the cooperation of fire services of different federal states as well as the cooperation with other organizations, institutions and authorities. The regulation respects the diversity of legal regulations of federal states by giving room for regional particularities.

The regulation DV 100 was developed based on the former Fire Service Regulation 12/1 “Command and Command-System” created between 1975 and 1980 and on the

former national Disaster Control regulation KatSDV 100 “Leadership at Missions” of 1982. As consequence of the cancellation of the KatSDV 100 in the context of the revised civil protection policy in Germany, it became reasonable to name the new regulation according to the police, the armed forces and the non governmental sanitary organizations “DV 100”.

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1. General

Importance of the command system

The task of the emergency services in general is to respond simultaneously to one or several dangerous incidents which are frequently based on incomplete information.

The incident as well as the actual situation may have reached its final development with regard to extension and/or level of risks and hazards (e. g. railway-accident, earthquake) or may still increase during emergency response actions (e. g. major fires, flooding).

The response to the incident or disaster may require, with or without of a termination of the actual cause of the situation, the implementation of complex technical and organisational measures.

The task of the command system is, to initiate all measures to response to dangers and to limit damage. This entails in particular, to engage intervention forces and authorities, at locations and in situations that are not fully assessed, with an optimum of efficiency. Hence, the incident command has to gather and assess information quickly. The success of command and control is significantly influenced by leadership and command organisation. As basis success of command serves a comprehensive incident command system.

1.2. Legal Regulations

The German basis for emergency response operations are the legal regulations of the federal states, in particular those regarding the fire service and disaster control. It designates the person in command and defines his rights and obligations. The main objective of command is to implement – executed by the units and authorities under command - all necessary measures for the protection of the society or of individuals.

The person in command may have, according to legal regulations, the right to impose measures to third parties which are not directly involved in the legal frame of emergency response.

Where major disasters necessitate the formal declaration of a “catastrophe” the specialized laws for disaster control or the regulations of some German Federal States (federal laws for civil protection) supersede fire service regulations.

2 Leadership and Command

Definitions

Leadership is the process of actively influencing decisions and actions of persons with the aim to achieve specific objectives. This means to induce others to act in a way that is necessary to achieve the defined goals.

Operational Command means acting with an overall responsibility for the area of disaster and the deployment of operational forces.

The basis for successful leadership and command lies in the personality and attitude of the person in command.

Leadership

Leadership depends on the personality, the competence, and the mental and intellectual capabilities of the person in command. The success of the involved forces is therefore considerably the result of the personal leadership qualities of the person in command, in particular of his decisiveness.

Command Attitude

Command attitude is designated by the interactions between the person in command and his subordinates. Command attitude does mainly emerge in the interpersonal area; therefore any behaviour – even unconscious behaviour – influences the commanded person. Command attitude depends on the situation and determines the style of leadership.

Styles of Leadership

Different possibilities of command attitude are expressed by the style of leadership. In reality, styles of leadership with clear and unchanging characteristics are rarely encountered. The variety of different styles of leadership is limited by the two idealised and opposed styles:

Authoritarian style of leadership, characterized by:

- Fast decisions and urgent measures
- Subordination under the volition of the superior
- Strongly marked authority of post
- Small latitude in the implementation of orders
- Close-meshed control of task fulfilment

Cooperative style of leadership, characterized by:

- Consultation of colleagues and specialists and their inclusion into the decision making process
- Delegation of responsibility and latitude at implementation of orders
- Information of staff regarding the situation and the intent of the person in command
- Involvement of the command staff in preparation of decisions and in the outcome of measures.

Due to the variety of different requirements of command and the different characters of leader and subordinates encountered in practical experience, neither a style of leadership singularly based on order and obedience (authoritarian) nor a style which is entirely based on agreement (cooperative) promises success. This holds especially true during missions.

The person in command should predominantly lead in a cooperative way to create confidence and motivation. The subordinates should therefore participate in the preparation of decisions whenever appropriate. However, leaders should consider that it is indispensable to react with clear and fast decisions followed by laconic orders in extreme situations.

Leaders should be very conscious of their personal style of leadership and able to correctly assess the actual situation in order to understand to which degree their conduct serves primarily to ensure obedience of orders and realisation of measures to immediately reach a given objective (characteristics of the authoritarian style of leadership), or serves primarily to further a motivating mission-concentrated cooperation with subordinate forces whilst making best use of their competence and initiative (characteristics of the cooperative style of leadership).

2.3.2 Mission-Tactic as concept for incident command

Mission-tactic is a conception of incident command that gives involved forces/authorities a maximum of latitude to achieve their objectives in missions. This requires a high level of competence and responsible independence of the person in command and of the assigned units. Mission-tactic requires continuous flux of reports to the person in command given by the assigned forces/authorities.

In application of mission-tactics, the description of the mission can be limited to an unequivocal designation of its objective, leaving open ways and means to achieve it. The subordinated forces have therefore a maximum of options and can act widely independently, swiftly and flexible to new facts or unexpected events. The only thing that is crucial is to accomplish the given objective of the mission.

3 The incident command system

Principals of an incident command system

In order to achieve the objectives its is necessary to implement a command system (Figure 1). It consists of:

- Command Organisation (structure)
- Command process (procedures)
- Means to implement the Command system (equipment)

The following principles should be applied:

- Mission, authorisation and means should be balanced
- Range and extend of missions should be of manageable size and clearly defined
- Superiority and subordination must be clearly designated
- The cooperation with other, not subordinated units and agencies should be ensured
- The responsibility to maintain health an operational ability should be respected
- Practicing a cooperative style of leadership, nevertheless the overall responsibility remains with the person in command.

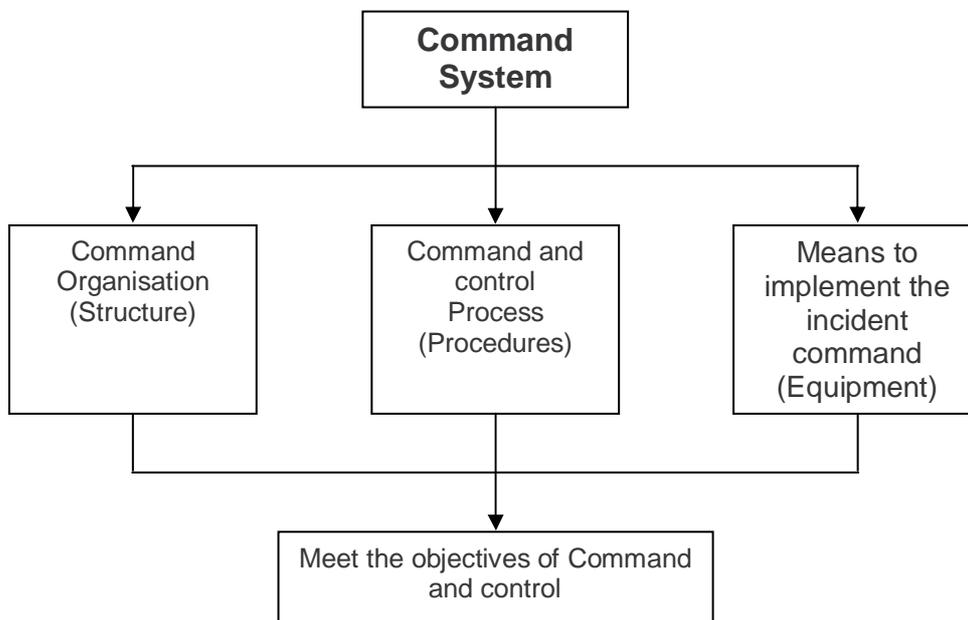


Figure 1: Command System

The efficiency of the command system can be measured by the degree in which extent the commander achieves the objectives and reacts swiftly and appropriately to situations.

3.2 Organization of incident command

General

The command system defines the roles and responsibilities of the commander and his command staff as well as the different levels of command.

The command organisation ensures a smooth, efficient and continuous management executed by commander and the command staff to meet the particular needs of the incident, based on its nature and size. The commander should perceive the need of additional staff resources in advance. He shall preposition the responsibilities for key roles in his staff.

Incident command

The incident command consists of

- The incident commander supported by
- an off site support facility (e. g. Coordination and logistic centre) and if necessary
- command assistants

The incident command needs technical resources to accomplish its objectives.

The legal regulations of the German federal states for fire service or disaster control indicate who is the responsible commander.

Duties of the incident Commander

The incident commander assumes the responsibility for the management of the incident in commanding the subordinate units and in coordinating all emergency service organisations involved.

Saving lives, rescue and protection of human beings are the principal objectives of emergency response. Often rescue operations can only be executed successfully after hazards or the effects of menacing dangers have been eliminated or at least limited. Protecting and saving property and values and the protection of the environment may be secondary with respect to the priority of live saving operations.

The incident commander may have the jurisdiction – based on legal regulations - :

- to call on people and resources for operational needs
- to enter rooms, premises, buildings and ships
- to block roads, bridges or deny access to the incident zone
- to detain people being a danger to themselves (e. g. suicidal persons)
- to shutdown industrial sites for a limited duration

Structure and Size of Incident Command

The structure and size of the incident command depends mainly on the nature and extent of the incident as well as on the personnel and the equipment assigned. At common incidents the leader of an intervention unit can normally assume his responsibility without the support of a command staff. In case of more complex incidents the incident commander needs the support of a command support unit or staff as well as of a control room.

An incident command support unit shall be comprised at least of

- a command assistant
- a communications-assistant
- a car driver (second communications-assistant)

and should dispose of the necessary means to install a command post on site.

This smallest structured command unit is called -Command Team of 3 and should dispose of a command vehicle.

Incident command support units may be defined as:

Command-Team of 3	(squadron; in german: "Führungstrupp")
Command-Team of 6	(squad; in german: "Führungsstaffel")
Command-Team of 9	(group; in german: "Führungsgruppe")
Command-Staff	(in german: "Führungsstab")

If an emergency incident exceeds a certain size, the incident commander is no longer capable – even with the support of a Command-Team of 3 - to accomplish the mission successfully. He needs to be supported by additional personnel and technical resources. These command assistants may act on scene or off scene according to the needs.

The incident command shall be organized in a structure where the incident commander delegates responsibility. The classic key roles of that staff organization are:

- | | | |
|--|-----------------|-------|
| • Personnel and Administration | Staff Section 1 | (S 1) |
| • Information gathering and assessment | Staff section 2 | (S 2) |
| • Operation | Staff section 3 | (S 3) |
| • Logistics | Staff section 4 | (S 4) |

If required, reasonable additional functions may be established, in particular:

- | | | |
|-----------------------------------|-----------------|-------|
| • Media and Press | Staff section 5 | (S 5) |
| • Communications and Transmission | Staff section 6 | (S 6) |

Depending on the extent of activities, a command assistant may be charged with one or more key roles; the command assistants report directly to the incident commander.

In general, a command-staff is composed of the incident commander, the respective responsible of the staff-sections S 1, S 2, S 3 and S 4; and in case of need the

respective leaders of the staff-sections S 5 and S 6, experts and representatives of agencies needed, according to the nature of the incident.

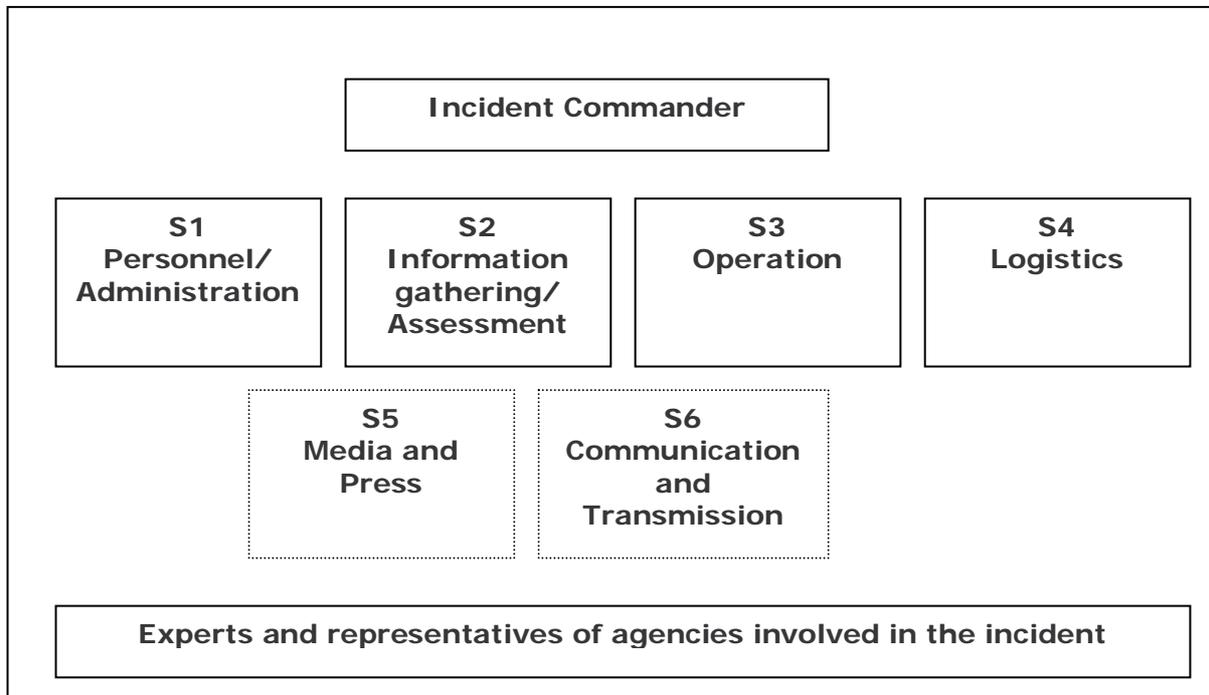


Figure 2: The incident command staff

The internal designation of responsibilities depends on the tasks according to the situation of impact and damage. The changeover between the different responsibilities should be flexible to ensure continuity within the command organisation.

The execution of an incident command function is not limited to the command post on scene; in particular the roles S1, S4 and S6 may be carried out in total or partially in other facilities, e. g. in the command centre, on a fire station or in a communication centre.

The incident command should – in addition to the respective classic staff - also include the representatives of authorities, emergency services, involved institutions and agencies and experts.

Members of the incident command organisation shall continuously give support, information and advice to the commander and report to him on a regular basis. They shall prepare decisions and transmit orders.

The personnel involved in the incident command should be kept to a minimum but should consist of excellent professional capabilities and personal abilities.

3.2.3 Command Post

The command post is the location of the incident command. If the incident scene is split into sectors subordinated advanced command posts should be established.

The command post can be based on fixed or mobile facilities.

Fixed command posts should be preferred, especially if the incident command is of large scale or if an operation is expected to be long-time. Fixed command posts may be established in suitable facilities near the incident scene. It is recommended to install the command posts for large scale disasters nearby the control centre or the responsible administrative authority.

Command posts need to dispose of telecommunications installations and the respective equipment. A command vehicle is normally indispensable in order to have radio communication.

Mobile command posts should always be equipped with a command vehicle with complete information and communications techniques. At disasters where the commander is supported by a command unit, the mobile command post should be equipped with a command vehicle that is large enough to accommodate this command unit.

3.2.4 Levels of Command

The level of command is a specific characteristic of the incident command organisation. All personnel with comparable areas of jurisdiction and responsibility who report to the same superior form a command-level. Command levels are created in accordance with the organization of engaged authorities and the requirements of the situation.

As a general rule the different levels of command should not have the responsibility for any more than two to five subordinated units (span of command and control).

The levels of command in emergency response result from

- The tactical organisation with respect to strength and type of units
- The tactical organisation incident scene with respect to type and extend of the area
- The organisation according to the authorities having different jurisdiction (mainly in large scale emergencies and disasters)

Once implemented, a level of command should not be trespassed in violating the authority and responsibility of the concerned supervisor. Otherwise this may create the risk that essential facts for the decision process are not known and are not taken in consideration as reasonable.

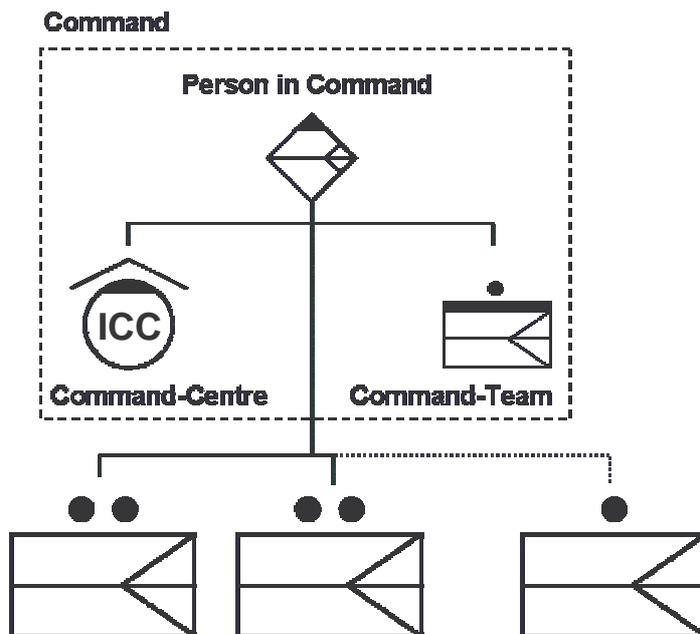
3.2.4.1 The tactical organisation with respect to strength and type of units

According to the organisation of the fire service the levels of command are the following:

- Level of tactical units Team of 3 (*“Trupp”*), Team of 6 (*“Staffel”*) and Team of 9 (*“Gruppe”*)
- Level of the tactical unit company (*“Zug”*)
- Level of the Brigades (*“Verbände”*) formed according to situation and the need to achieve a certain objective.

Examples:

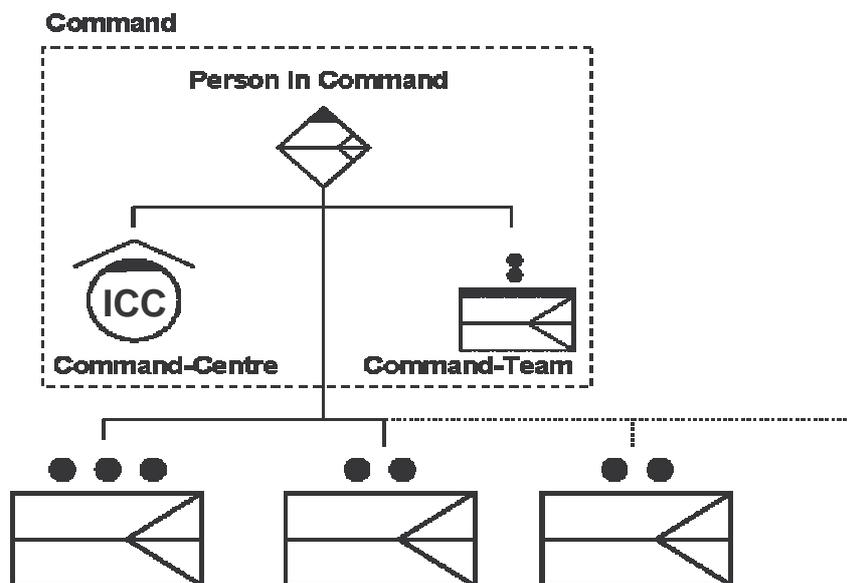
Command organisation to lead a Company (*„Zug“*):



The commander of a company (*“Zug”*) normally disposes of a command team of 2. Each Commander of a team (*“Gruppe”*) disposes of only 1 communication assistant and is supported by the command and communication centre.

The person in command of a company should have a command car at his disposal.

Command-organisation to lead a Brigade (“Verband”)



The commander in charge of a brigade should dispose of command teams whose strength depends on the nature and extent of the incident scene. The manpower for the command team has to be recruited from the units arriving on scene or has to be alerted additionally.

The command support team for a brigade normally consists of a team of 6.

The commander of a brigade should dispose of a command vehicle.

3.2.4.2 Levels of Command according to the organisation based on the incident area

If disaster areas or scenes reach a certain size it may be necessary to subdivide the disaster scene into sectors.

Within a given sector one or more tactical units of different nature and strength may be employed, those are subordinated to a sector-commander.

A disaster scene or a damage area can normally be split into up to five sectors. At larger disaster scenes or damage areas a more thorough organisation of the disaster scene may be necessary; in that case an additional level of sub-sectors may be introduced.

At a large scale disaster multiple local or regional incident commands may have to be coordinated by a higher regional command system. In accordance with the tactical organisation of the total disaster area the following command-levels may be reasonable:

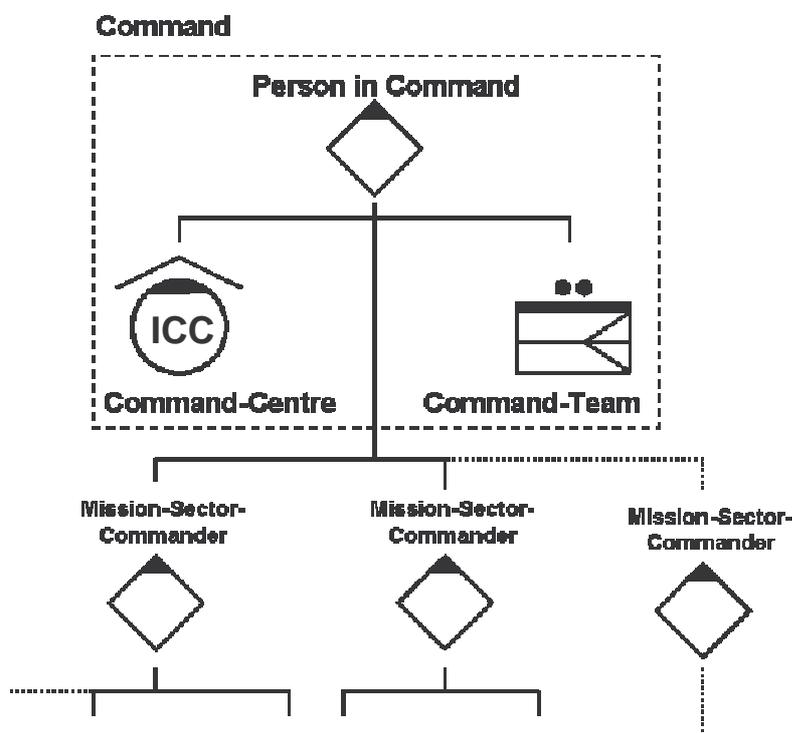
- Level of the disaster area

- Level of the disaster scenes
- Level of the command sectors

Specific rules for the designation of units to a command sectors cannot be defined. This is in the responsibility of the respective incident commander.

Depending on nature and extent of the disaster the commander should be assisted by command support personnel, recruited from amongst the units present on scene or called to the disaster scene to form a command-unit.

Example for a command organisation split into sectors:



If sectors are implemented, the work force to carry out the function of sector commander and their assistants is needed. Each commander should dispose of the needed infrastructure for communication, e.g. a command vehicle.

3.2.4.3 Levels of command at large scale disasters

At large scale disasters and disasters of prolonged time scale, the overall command is at the head of local or regional authority on political level.

The person having the **overall political responsibility** (e. g. mayor, governor) has to initiate, coordinate and take responsibility for all measures taken at the disaster scene and taken by the administration. To ensure this responsibility an organisation is set according to the legal regulations implementing an operative-tactical-

component to accomplish the operative related measures and an administrative-organisational component to accomplish the administrative related measures for disaster control.

This **operative-tactical-component** (e.g. the command posts on the different level of command) has to be organised in accordance with the description in chapter 3.2.2.2. The commander of this component has to be assigned in accordance with the legal regulation of the federal states.

The **administrative-organisational-component** (e. g. named “Crisis Cell / Staff for extraordinary events”) is mainly an administrative council according to the legal regulation of the federal states that integrates all administrative institutions, organisations and departments needed for mastering of the disaster and the restorement of normal conditions.

Task and goal of the this component is, to accomplish comprehensive decisions on administrative level fast, balanced and taking into account all necessary aspects under the time-critical regime of the disaster.

The **technical-tactical component** is taken care of by the command-personnel of the tactical command levels. (As described in chapter 3.2.4.1 and 3.2.4.2)

Administrative-organisational measures are those tasks specific for an administration which according to legal regulations, financial responsibilities and general political conditions are not the duty of the forces or their command-personnel. Examples are: decisions to evacuate residential areas, care for displaced or otherwise concerned people, and initiating measures for others at their behalf as per administrative regulations, sanitation and health care, and the protection of property.

Operative-tactical-measures are those tasks that coordinate the technical-tactical-measures. Those are mainly the definition of the focal point of the mission, organisation of the disaster area (designation of sectors), organisation of forces (have forces, relief-forces and equipment ready within the disaster area), organisation of time (sequence of measures, redemption of forces by relief-forces) and organisation of information (creation and operation of a communications-structure).

Local technical-tactical-measures are supplemented by operative-tactical-measures at the regional command-levels (e. g. counties who are charged with regional disaster control). The operative-tactical-measures are not mainly perceived as and limited to logistical support.

Technical-tactical measures serve to accomplish the mission’s objective as designated in the mission by employing the appropriate units with the necessary equipment at the best locality within the right time frame.

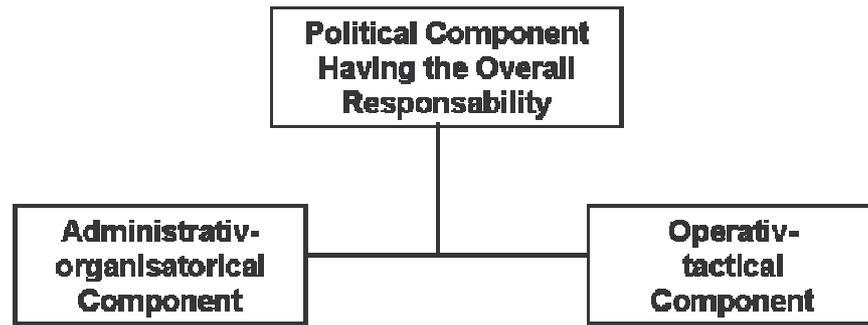


Figure 3: Structure of the political component and the responsibility of the two staffs.

3.2.5 Echelons of Command

The organization and the staff to implement the Incident command are flexible results of the development of the situation and the size of the emergency response tasks. Generally four different echelons of command are reasonable:

- Echelon A: “commanding without a command unit”
 - tactical units up to the strength of two Groups (18 personnel)
 - support by a command facility (e. g. command centre)
- Echelon B: "commanding with local command units"
 - Company or brigade at a disaster scene
 - Command Team of 2 or Command Team of 6
 - Support by a command facility (e. g. command centre)
- Echelon C: "commanding with command-team of 9"
 - brigade at a disaster scene
 - command-Team of 9
 - Support by a command facility (e. g. command centre)
- Echelon D: "commanding with command-team of 9 or with a command-staff"
 - several brigades at a disaster scene or at several disaster scenes
 - command team of 9 or command staff coming from regional level
 - Use of command facilities of the authority having jurisdiction (e. g. command centre or information and communication centre of the regional authority)

3.3 Command-Process

Commanding is a target orientated process of thinking and acting that is continuously repeated. Decision are prepared and carried out. This process is not limited to actions of the incident commander but also to all persons involved in the incident command system on all levels of responsibility.

A successful commander needs to employ

- the right means
- at the right moment
- at the right place.

To avoid acting, which is only based on intuition and experience, a scheme is needed to illustrate the command process. The scheme beneath proved to be convenient.

- Establishing / Analysing the situation (reconnaissance / control)
- Planning with
 - assessment of the situation
 - decision making
- Implementing directives and orders

Usually, the incident commander cannot meet the objectives in running through the command process only once. Only a permanent and continuous process assures the ongoing control of the results and the effectiveness of the implemented directives and an appropriate modified planning and decision.

The command process can be illustrated in using a circular chart:

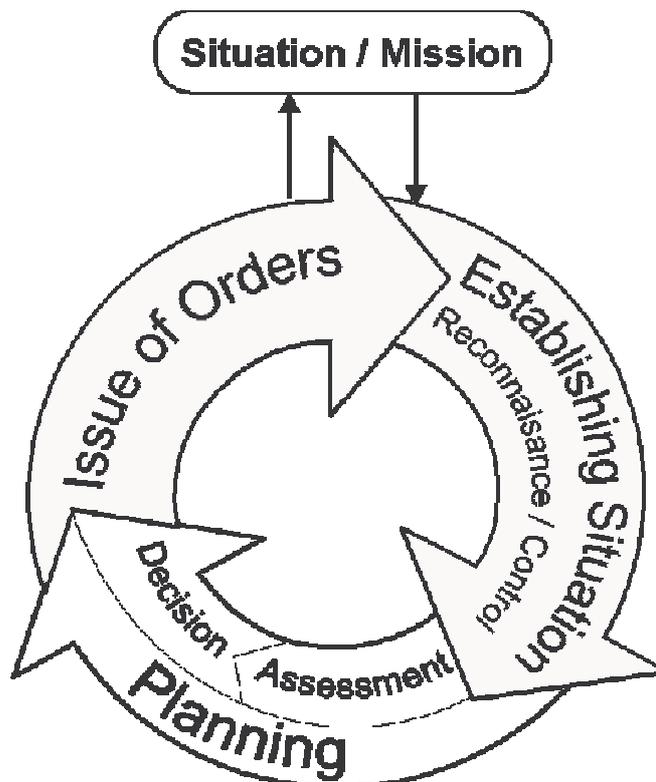


Figure 4: Circular chart of the command process.

In this scheme neither the collaboration between different levels of command nor parallel actions, disturbances and deviations of the goals can be explained.

Command is a dynamic process of decision making and acting under the scope of high time pressure. Often decisions have to be taken without sufficient reconnaissance, analysis and assessment of the situation. Therefore an improved reconnaissance and analysis with revised planning and directives should be executed continuously for as long as necessary.

3.3.1 Establishing the Situation (Reconnaissance / Control of implemented measures)

3.3.1.1 Information as basis of the analysis

Establishing the situation consists of the initial reconnaissance and the control of implemented measures and is followed by an assessment of the present situation. It should be goal-orientated and related to the level of command.

Reconnaissance is the first phase of the command process and it is the basis for the following decisions. It consist of the collection and preparation of available information concerning nature and size of the incident respectively the situation of damage as well as the urgency and the possibility of controlling existing dangers and the impact of damage.

In order to implement the emergency response information about the level of competence and the intervention preparedness of forces and equipment has to be available and the legal basis of needed disaster control measures must be known. Furthermore, information about the local, temporal and climatic conditions have to be collected. The local conditions are mainly defined by topography, buildings, traffic conditions and vegetation.

The conditions in time are mainly influenced by the time of day and the time of year. Particularly the time of day gives indications of the presence of people, their number and their general disposition.

The overall situation is designated by the factors: locality, time, weather, damage-impact, and level of emergency and the possibilities of emergency response. (see figure 5).

Control is the verification of the decision implementation and in this way the comparison of the implemented measures with the intentions of the commander.

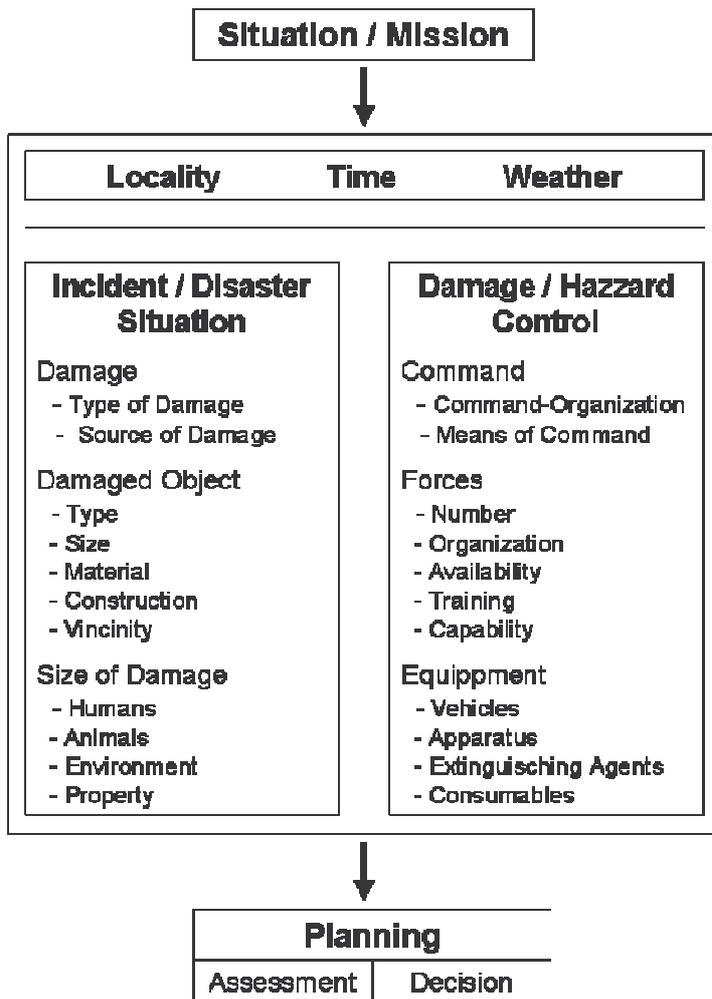


Figure 5: Establishing the situation

3.3.1.2 Gathering Information

The commander can receive needed information for the evaluation of the situation generally from:

- the indication of the standard intervention procedure that is set up
- the information and the objective indicated in the mission order
- personal perceptions and observations
- reports of subordinate command levels, forces and other qualified persons as well as of the population
- intervention planning, maps, intervention procedures and legal regulations.

The commander should be in the position to evaluate the information and recognize the limits of the different sources of information. In this context it may be important to know which results can be expected or demanded at what time.

If necessary, procedures have to be established to ensure the permanent and rapid

- information gathering
- information assessment
- information transmission

3.3.1.3 Reports

In general, reports are the most important basis for the assessment of the situation. Standing duty of all command levels is to regularly assess the situation and report without special order to the superior command-level. This holds especially true:

- After having implemented mission-orders.
- After having stated that the mission received cannot be accomplished
- When the situation has changed and a reactions is required

For giving reports the following requirements have to be considered:

- reports should be given immediately
- reports should contain the time of the incident or of the reason
- reports should be clear, factual and unambiguous
- reports should be short but complete
- reports should be neither overstated nor understated
- facts and speculation must be clearly distinguished between
- reports should be indicated according to their urgency

Reports must clearly indicate if the content:

- is the result of personal perceptions and observations
- is the result of reports of third parties
- is a speculation of the person reporting

The most important requirement of the assessment of the situation is it's actuality even if details may be incomplete, inaccurate, contradictory and sometimes even wrong.

All commanders on all command levels should continuously scrutinize the evaluation of the situation and complete the assessment. Outdated, incomplete or missing information result in a faulty planning of the mission and eventually in wrong directives and orders.

A careful analysis of the situation is the best basis of all success.

For assessing reports the following should be taken into account:

- information should be assessed continuously
- reports should be assessed factually
- unclear but possibly important reports have to be checked
- speculations should be designated as such

Not only the assessment of actual realizations but also their comparison with former information can lead to important conclusions. Therefore all information has to be recorded reasonable and in temporal order.

To enable every participant of the incident command to lead and act optimally at any time, a continuous exchange of information has to be organized. The flux of information should therefore not only go from bottom to top of the hierarchy; but the commander should inform the forces in an adequate manner as well. This information can positively contribute to the intervention preparedness and highly increase their motivation to accomplish the mission's goal.

3.3.2 Planning

Planning is the systematic assessment of information and facts and the consequential conclusion of incident related measures

Planning consists of (Figure 6)

- the assessment
- the decision

Planning has to be performed in a manner that the result is neither overhasty actions nor delay of action. The planning has to be clear, simple and practicable.

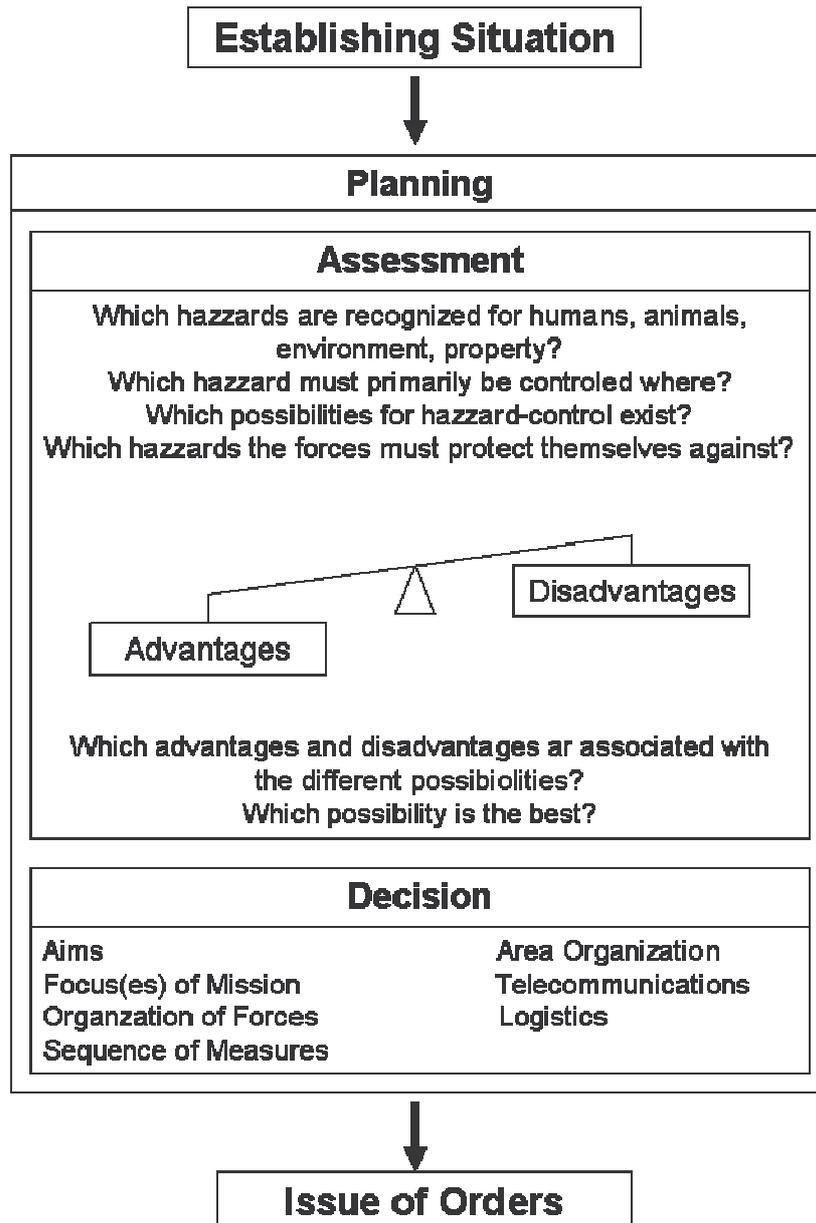


Figure 6: Planning

3.3.2.1 Assessment

Assessment is the process of mental weighing in which way the emergency management can be accomplished to maximum efficiency with the available means, taking into account the influence of locality, time and weather.

The assessment needs to be founded on an evaluation of all available information as outcome of the establishing of the situation. By weighing the advantages and disadvantages of different possibilities, the decision how to best control the incident has to be prepared.

The commander is expected to take swift and consistent decisions. He should focus on the essentials to facilitate decisions and clear orders for action with the shortest possible delay.

The basic idea of all tactical considerations is to achieve the maximum possible success with a minimum of effort.

The commander should avoid the mistake to deal with the incident more or less routinely just on basis of experience. There are now and then missions, especially at large-scale disasters, where often no experience of similar situations is available. In that case a commander can be faced with difficult, apparently hopeless situations but nevertheless he has to quickly come up with new ideas. In this case it might be possible to eventually have to choose the smaller of two evils.

The difficulties as well as the necessities of an appropriate assessment can be summarized as following:

- Forces and equipment have to be employed to optimum efficiency from a tactical point of view. It may be necessary to assemble forces that are very different with regard to numbers, equipment and training compared to those in day-to-day operations.
- Because the complete situation regarding hazards and extent is often only known after some time of operation, and because the incident alternates continuously, necessary information may not be available at the moment of decision.
- Often decisions have to be taken under pressure to initiate the emergency response. This risk encounters the more stress for the commander the more hazards the forces have to face due to his decisions.
- Unexpected obstacles with influence on the intended measures or obstructions by third parties have to be always kept in mind and should be taken into consideration.

3.3.2.2 The Decision

The decision establishes the process of action and is the consistent result of the assessment. The decision implements the planning of action.

The decision must especially take into account:

- the measures to be implemented
- the forces and equipment to be employed;

In case of need:

- (additional) forces and equipment have to be requested
- mission-sectors have to be established
- focal points of the mission have to be defined
- reserves in personnel and equipment have to be made available
- stand-by-areas have to be defined
- assembly-areas have to be defined
- measures to fence off areas have to be organized

Under all possible circumstances the person in command should take clear decisions even if doubts remain. Decisions once taken, should not be changed without compelling reasons.

Under the dynamic of a situation, however, it can be also a mistake to stubbornly hold on to long to decisions. A sure sign of good command is to recognize circumstances and moments when decisions and measures should be modified according to the evaluation of advantages and disadvantages.

3.3.3 Issue of Orders

The order is the instruction for subordinated units to carry out measures for the emergency response. By issuing an order, the decision is put into action.

The commander normally issues orders in writing or verbally - in some cases by other means - using a certain scheme. The order must express the intention of the ordering person clearly and undoubted.

Orders require obedience in accordance with legal or other regulations of implicated authorities. Orders must be executable. Orders that overburden the subordinates lead to insensibility, blunting, seduces them to disobedience or to falsen reports and undermines confidence in the leader.

Clear structures of subordination and command are an essential basis for cooperation. Command-personnel are only empowered to issue orders to direct subordinate tactical units. Orders should never pass over other command levels. Only exceptional situations may justify a deviation from this basic principle requiring the immediate information of the responsible command level.

Having the command does not only imply the right but also the obligation to issue orders.

3.3.3.1 Structure of an Order

The content of an order should be well thought-out, brief and clear. It should be complete but limited to what is really required by subordinates to carry out the intervention.

The order scheme defines normally:

- **The concerned unit**
- **The objective of the mission**
- **The assigned means**
- **The location of the mission**
- **The method or the way recommended**

The order must at least consist of:

- **The concerned unit**
- **Objective of the mission**

In case of a long term command process it may be useful to extend and restructure the scheme as:

Situation

- Hazard and damage assessment
- Possibilities of intervention to limit damage and risks
- Allocation, subordination, handing-over of forces

Mission

- mission as described in the order

Realization

- own intention
- missions for the respective units
- cooperation and coordination with other forces
- time table
- protective measures

Logistics

- Recreation, catering
- fuel, oil, gas and other consumables
- maintenance
- medical care

Command and Communication

- command and communication structure
- contact points,
- command posts

Written orders have to entail additionally:

- Origin of order (tactical designation)
- Location of issue
- Date and time
- Distribution list
- Enumeration of Annex

- Signature and function of the ordering person.

The information and motivation level of the forces receiving the orders can be improved by giving additional information:

- a description of the situation
- detailed information about the mission
- an explanation of the general intent of the commander

To cooperate with other forces efficiently, it is crucial to complete the order by including general conditions (e. g. form of employment, boundaries of mission sectors).

To facilitate coordination it may be necessary to list time related events at “Realization”:

- begin of the mission
- duration of the mission
- resting time
- time of relief

Under “Logistics” it may be appropriate to give information concerning

- locations of logistic points
- supply lines
- time of supply

Under “Command and Communication” the following issues have to be defined:

- the established organization of command
- the allocation of forces within the order and report system
- the localisation of command posts
- the available communication lines

3.3.3.2 Basic Rules for the Issue of Orders

The accurate description of the mission for the concerned unit is the central part of the order. If the order is limited to this without prescribing the way, the means and the methods, the recipient of the order has wide latitude to carry out the mission (mission-tactics).

The longer an order has to stand, the greater independence of detailed prescriptions is needed; the overall intention of the mission becomes important. This holds true for all levels of command. It makes no sense to include detail in the order that may be better seen and understood by the subordinate unit directly at the incident scene.

Units that are used being ordered in minute detail, remain inactive when orders are missing. The commander should only interfere if the realization of the emergency operation is no longer in line with the given objective.

Subordinate units may only deviate from given orders, if the situation has changed fundamentally, immediate action is indispensable and the commander cannot be contacted in time.

Any action should, however, be in line with the intent of the superior command level. In case of a deviation from given orders it has to be reported to the commander as quickly as possible.

The language of orders must be simple and understandable. Orders must be given calmly and objectively even in stressing situations. Clearness is more important than formalistic behaviour. Clarity cannot be compromised in favour of brevity. Meaningless phrases and idioms have to be avoided. The content of the order has to be in accordance with the decision taken previously.

The person issuing orders should take the individual situation of the recipients into consideration and adapt the content of his orders to the subordinates' level of knowledge.

Reversely it is the subordinates' obligation to reflect on the intent of their superiors. Is this intent unclear, subordinates are obliged to ask for clarification; is the order in conflict with the situation this has to be pointed out to the person in command.

The right moment to distribute orders depends on the situation and the available communication network. The more urgent the situation is, the quicker and shorter the order should be. The time that an order needs to reach its recipient has to be taken into account in planning; this fact should not be underestimated. It could be necessary to verify the point of time that an order has reached the recipient.

3.3.3.3 Types of Orders

The following types of orders can be differentiated:

- Individual order
- General order
- Preselect command
- Command

The **individual order** gives directives only to a singular person with responsibility. The individual order informs the recipient about all that concerns him and about what he should know to accomplish the mission.

The General order is valid for several recipients in identical manner and is issued simultaneously to all of them. It is a common and general basis for their actions. It may be useful to summarize preceding individual orders into a general order from time to time. It is recommended to give general orders in a briefing meeting nearby

the scene with presence of all personnel in command if that would increase the cooperation of different units and if the type of incident gives this possibility. The **preselect command** contains those details to enable units to prepare themselves for later action. Often, preselect orders are used in advance to general or individual orders. Example:

“Prepare for a mission outside the local area of expected three days duration in XY-city. Expected time of departure into mission is 19:00 hours.”

A **Command** is an order in shorthand of a certain trained wording that demands immediate action. The implementation is done “automatically”.

A Command may be issued by optical, acoustical or other signals which are generally understood.

Command personnel issue orders in written or oral form according to the situation. At incident scenes orders are generally given orally. In unclear, difficult situations where an organisation should be implemented or where different interests have to be coordinated the written order is preferable. This hold true, for example, for long marches to incident areas and for confusing large scale incidents. Important oral orders have to be documented when issued or immediately thereafter.

Drawings, sketches, map-details and pictures complete the order, may shorten their issue significantly and facilitate the overall understanding. Sometimes it is sufficient to issue an order in form of a drawing or sketch and complement it orally where needed.

The way how an order is transmitted to the recipient depends on the availability of transmission means e.g. transmission by communication means or by personnel. An explicit confirmation of the reception or even a repetition of the message may be used as control procedure.

When important orders are transmitted by communication means the identity of the issuer or the recipient has to be checked by a call back procedure. The time of issuing and in case of need of receiving should be documented.

3.3.3.4 Change of Command

Command personnel arriving on scene at a later stage can only take over the command if they are entitled by law or regulation. They should only do so, if there is an actual need.

Before assuming the responsibility of command a complete briefing is indispensable. Orders and measures already initiated should only be altered in case of a compelling necessity.

Assuming and handing-over of command should always be clearly formulated and announced, e. g.

“I assume command. You are now acting as”

or

“I have handed over command to, . I am now acting as”

A handing over or assumption of command must be executed at every change of command personnel or responsibility and must be announced to subordinate forces and has to be documented.

3.3.4 Repeated Establishing of the Situation – Control

After having issued orders, the command procedure should be continued with another repeating establishing of the situation. This serves not only to analyse changes of the situation but primarily to control the effects of implemented orders. This control compares the achieved advancement with the expected results of missions. Control is an ongoing task in the total process of establishing.

The obligation to control is a result from the assumed responsibility. Control should be carried out factually and with understanding in a way that is accepted as support by the supervised units.

Different methods and means of control should be applied in a way that

- control is sufficiently carried out
- stress on the units is minimized
- control gives support to units

The person in command should implement a chronological documentation as a control measure in his area of responsibility.

3.3.5 Documentation and Representation

In the beginning the situation and the events of the starting mission should be documented as far as possible by the control room or command centre.

As soon as a command post has been established on scene this PC assumes the documentation and the planning according to the situation in the area of responsibility. The command centre's tasks in documentation are not diminished by this. Therefore it is essential for the command centre to get sufficient reports of the situation.

Documentation means gathering, collecting, structuring and noting of information and facts which may be of significance for proofing a reasonable incident command process, and enabling an evaluation of the incident command system in the follow up of the incident.

The representation of the situation describes the impact of the incident with hazards, damage, vicinity and the initiated measures of emergency response.

The representation of the situation could be facilitated by using prepared documents and summaries. The most important could be:

- forms
- documentation of reception and issue of orders and reports
- mission diaries
- maps
- tables for personnel and equipment
- prepared incident action plans
- communications planning
- communications structure plan
- audio-visual recording.

Command centres carry out the documentation usually using IT systems.

3.4 Means for implementing the Incident Command

The means for implementing the incident command on scene are technical equipment and facilities that support the tasks of the command staff at work.

The means allow gathering, processing and transmitting information that is essential for the command process. These are differentiated into:

- Means to gather information
- Means to process information
- Means to transmit information.

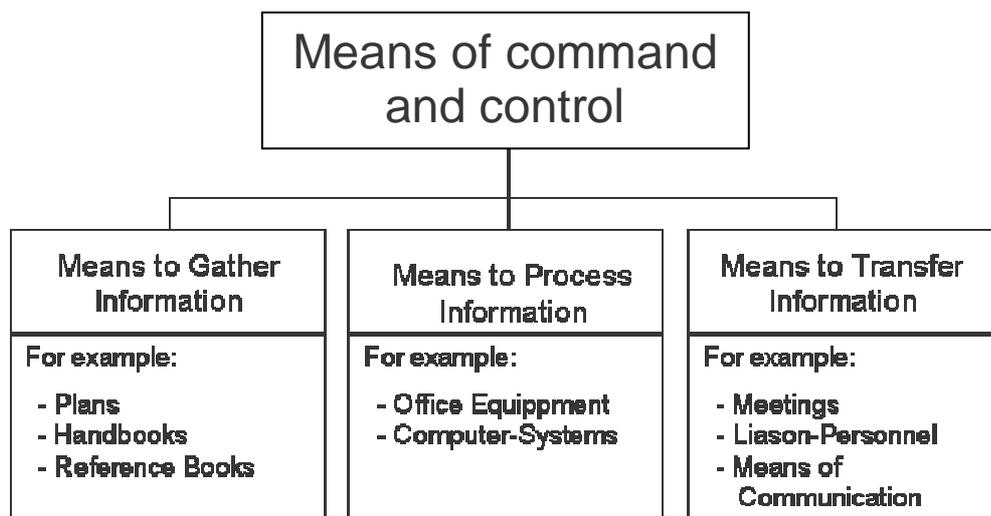


Figure 7: Means of command and control.

Means of command support the command and control process. They can be distinctly allocated to the steps of the command circle (Figure 8). This emphasises the importance of the means of command within the dynamic command procedure

and explains the close interrelation between procedure, organization and means of command.

None of the means of command, however, can disengage the commander of his personal obligation to take decisions and responsibility.

3.4.1 Means to gather Information

Means to gather information are in particular:

- facilities to receipt emergency-calls
- intervention planning
- incident planning for buildings, plants and other special installations
- incident related operation procedures
- maps of hydrants
- commander's manuals
- maps
- reference books
- address books and other registers
- guidelines
- computer-based information systems
- fire alarm systems

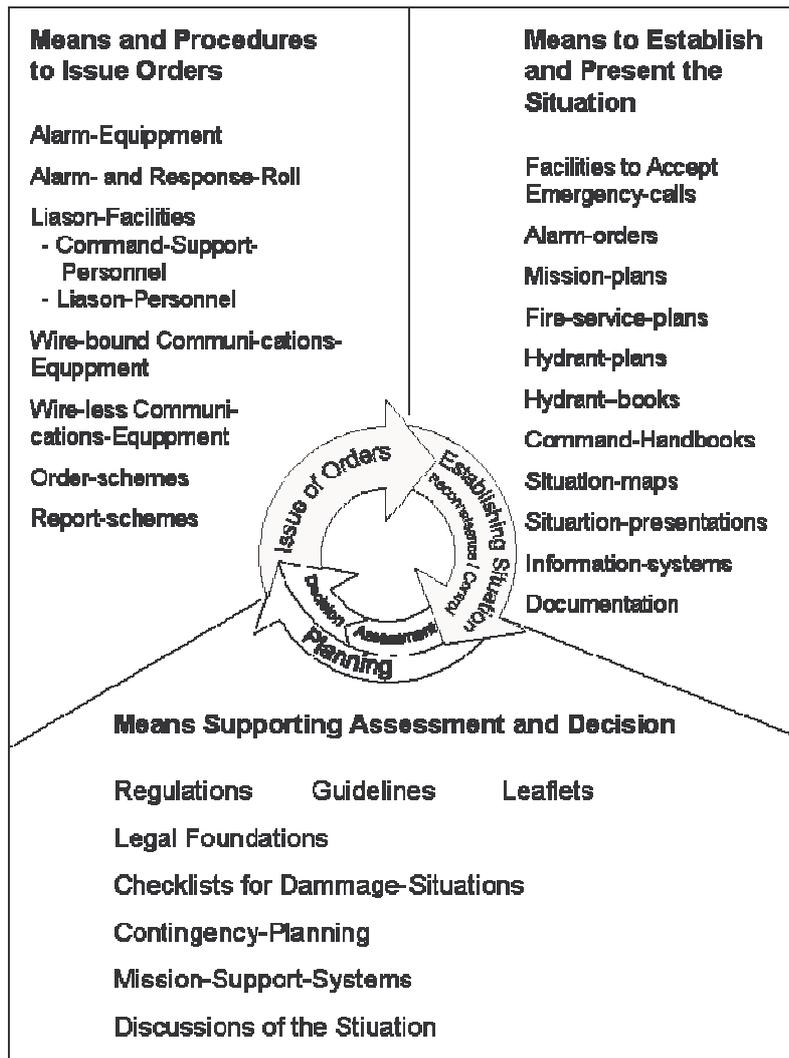


Figure 8: Means of command in the command and control procedure.

3.4.2 Means to Process Information

Means to process information are in particular:

- office equipment
- IT systems for mission support

Office equipment could be:

- Forms, typewriters, personal-computers (PC) with printer, text-processing-programs, flipcharts.
- Additionally the following equipment may be used: radios, dictaphones, copy-machines, instant-picture-cameras, overhead-projectors, pocket-calculators, television posts and video cameras.

Computer-systems for mission-support are for example:

PC-systems for command staff, data-transfer-systems, geographic positioning systems (GPS), geographic representation systems and internet connections.

3.4.3 Means to transmit information

Means to transmit information are in particular:

- Meetings
- Liaison-organs (e. g. command staff, liaison personnel of authorities)
- Communications equipment

3.4.4 Communications

The national German regulation “DV 800: “Communications in missions” is valid for the “institutions and organizations in the field of safety and security” (e.g. National and federal states police, Fire Brigades, Ambulances, disaster relief organisations). It outlines principles for the implementation of communication means in emergencies. This regulation shall assure smooth cooperation of institutions and organizations related to safety and security in the field of telecommunication.

Annex 1: Definitions

The following collection entails often used terms of incident command.

Overview

1. Forces and Equipment

- 1.1 Forces
 - 1.1.1 Personnel
 - 1.1.2 Incident Commander
 - 1.1.3 Sector-Commander
 - 1.1.4 Command Assistant
 - 1.1.5 Command Support Personnel
 - 1.1.6 Support Personnel
- 1.2 Equipment
- 1.3 Readiness
- 1.4 Relief-Forces

2. Organization of Areas

- 2.1 First-Call-Area
- 2.2 Danger Area
- 2.3 Disaster Area / Incident Area
- 2.4 Incident Scene / Disaster Scene
- 2.5 Mission Sector
- 2.6 Mission Subsector
- 2.7 Mission Area
- 2.8 Mission Focus
- 2.9 Staging Area
- 2.10 Collecting Area / Assembling Area

1. Forces and Equipment

1.1 Forces

Forces are every person active at an emergency-scene / disaster-scene with their respective equipment and support-personnel.

1.2 Personnel

Personnel are every person trained for active duty at an emergency-scene / disaster-scene inclusive their command-personnel.

1.3 Incident Commander

The incident commander assumes the overall responsibility for the technical-tactical measures of emergency response at an emergency-scene / disaster-scene.

1.3.1 Sector-Commander

The person responsible for the technical-tactical action within a sector of an emergency-scene / disaster-scene.

1.3.2 Command Assistent

A person who - as member of a command support unit - supports the incident commander or another person bearing responsibility within a command organization at their duties. Examples: Chief of Staff, Staff-Function 1 to 6.

1.3.3 Command Support Personnel

A person who - as member of a command support unit - supports the incident commander or command assistent at their duties. The units of command support personell are team of three, team of six, team of nine or staff

1.3.4 Support Personnel

Support personnel are persons that are - for a certain period with or without with equipment - drawn to fulfil mission-objectives. Support personnel need not be especially trained.

1.3.5 Equipment

Equipment means facilities, vehicles, machines and materials needed by forces to fulfil their duties.

Facilities are constructions for command, logistics and accommodation.

1.3.6 Readiness

Readiness is the state of forces and equipment which allows to accomplish successfully the mission. The readiness of personnel is influenced by their number, level of training and their strength.

1.3.7 Relief-Forces

Relief-forces are forces and equipment which are held in reserve to cope with unexpected hazards or to relief employed forces.

2. Organization of Areas

2.1 First-Call-Area

The first-call-area is that part of terrain in which designated forces are responsible for the repulse of hazards and prevention of damage.

2.2 Danger Area

The danger area is that part of terrain in which risks for life, health, environment and property are present or are to be suspected based on experience in that field.

2.3 Disaster Area / Incident Area

It is the total area of large extent that is affected by the same incident or disaster. It may hold several geographically separated incident / disaster scenes.

2.4 Incident Scene / Disaster Scene

The incident or disaster scene is the locality or the object (building, construction, ship, railway etc.) at which forces are employed at missions to mitigate fires, accidents or other emergencies. The incident / disaster scene may be subdivided into mission sectors.

2.5 Mission Sector

The mission sector is a part of an incident / disaster scene or an area of responsibility within such a scene. It may be designated by local boundaries (e.g.: “the western side of the building”, “from the woods to the creek”) or by type of action (e. g.: “water-transport”, “fire-fighting”, “rescue-services”).

2.6 Mission Subsector

At larger damage-scenarios the incident / disaster scene may be divided into several mission sectors. If it proves necessary to further subdivide these mission sectors, mission subsectors are designated.

2.7 Mission area

The mission area is that part of the terrain allocated to specific tactical units or brigades to fulfil missions there.

2.8 Mission Focus

Mission Focus) is that central and crucial location of hazard mitigation at which a enduring success must be achieved by concentrating forces and equipment.

2.9 Staging Area

Staging area is a generic term for localities where forces and equipment are held ready for immediate employment or - in preparation thereof - are gathered, structured and held at stand-by.

2.10 Collecting Area / Assembling Area

Collecting or assembling areas are localities in the vicinity of an incident / disaster scene outside the danger area where rescued, in brought into a safe area or salvaged persons, animals and property are taken care of and / or are registered (e. g.: gathering-area for injured persons, for the dead, for property).

Annex 2: Description of the Tasks of Staff-Functions within Command

The tasks of the person in command may be structured into the staff-functions:

- | | | |
|----------------------------|------------------|-------|
| – Personnel and Procedures | Staff-function 1 | (S 1) |
| – Situation | Staff-function 2 | (S 2) |
| – Mission | Staff-function 3 | (S 3) |
| – Logistics | Staff-function 4 | (S 4) |

If necessary additional staff-functions may be established, in particular:

- | | | |
|----------------------------------|------------------|-------|
| – Media and Press | Staff-function 5 | (S 5) |
| – Information and Communications | Staff-function 6 | (S 6) |

If the number of available command-assistent does not allow to staff each function, staff-functions may be integrated as follows:

- S 4 with S 1
- S 2 with S 3
- S 5 to S 2
- S 6 to S 3

Following are descriptions of the tasks assigned to the staff-functions S 1 to S 6. The overall responsibility of the person in command, however, remains undiminished.

The descriptions should act as guidelines, remembrances and support for persons in command and command-assistent to accomplish their extensive respective duties. Depending on type and size of the emergency-/disaster-scene the individual task have different stages of important.

S 1 Personnel / Internal Staff-Procedures

Preparation of sufficient forces

- alert of forces
- draw of support-personnel
- alert of institutions, authorities and organizations, request of their presence
- have relief-forces ready
- establish pilot-locations (contact-points) for out-of-area forces
- establish readiness-areas
- prepare overviews of forces

Conduct internal staff-procedures

- establish and maintain procedures
- prepare of command's facilities and ensure their safety
- have means of command at disposal

S 2 Situation

Establishing the situation

- Gathering of information
 - assign forces to gather information
 - request and assess reports

Presentation of the actual situation

- mapping the actual incident situation
- prepare and keep current of overviews of missions
 - description of the incident
 - present number, types and sizes of damages
 - present mission-sectors and mission-focus(es)
 - present assigned, in stage and needed forces and equipment
- prepare situation-reports and meetings for the discussion of the situation

Information

- report to superiors
- inform subordinates
- inform third parties
- inform the citizens

Documentation of the mission

- write mission-diary
- gather, register and assure all information-devices (forms, tapes, files)
- prepare final report

S 3 Mission

- Assessment of the situation
- decide about the course of the mission, e. g.: designate mission focus(es), designate necessary forces, equipment and relief forces, designate command post(s)
- designate and inform command personnel, e. g.: sector commanders
- structure the incident area, e. g.:
 - designate command organization
 - designate command post
 - designate staging areas
 - prepare collecting or assembling areas, e. g.: for the injured, the dead
- order exclusion zones
- designate ways into and out of the incident area, keep those passable
- cooperation with other institutions, public-services and organizations
- conduct meetings to discuss the situation
- issue orders
- supervise and control the conduct of missions

- initiate immediate measures for citizens in danger, e. g.: warning, accommodation, evacuation, provisions, transport and technical repairs of public utilities
- help to assure of salvaged property, at search for the source of the damage and of suspects, at the identification of witnesses and to secure evidences.

S 4 Logistics

- request additional equipment
- draw of support equipment, e. g. building material, propping and bracing material, cargo trucks, tank trucks, bulldozer, cranes
- make consumables and equipment available for forces, e. g.: water supply, extinguishing agents, breathing apparatus, fuel
- make rations readily available and distribute them
- assure maintenance for the equipment
- establish the logistics organization
- ensure the availability of rescue equipment for the protection of forces readily
- organisation of accommodation for the forces

S 5 Media and Press

Information of press and media

- collecting, selecting and redacting of information from the incident
- registration, documentation and evaluation of the press- and media situation
- authoring of press- and media information

Press- and media support

- Informing, leading and hosting of press- and media representatives
- preparing and implementing press- and media conferences

Press-and media coordination

- bundling, coordinating and controlling of the press- and media work in association with the spokesmen of other authorities (particularly police) and the affected firms
- constantly keeping contact with press and media

Integration of press and media into the damage control

- arrange and care for information-telephones and hotlines
- arrange from warning-and search clues for the population

S 6 Communications and Transmissions

Planning of the communications and transmissions

- determining the actual state of command organisation
- determining the actual state of transmission organisation
- arrangement of the command organization with S 3
- dividing the assigned communication channels
- request from special communication channels
- determining the need of forces for the transmissions
- determining the material requirement
- determining the application type of mobile telephones
- determining the application type of wire-bound communications equipment
- compiling a communication-concept including a transmission sketch
- securing the contacts with the communication and transmission services of the other authorities and organisations

Accomplishing of the communication-and transmission operation

- converting of the planning
- leading the communication- and transmission units
- ensuring of the communication (redundancy)
- transmitting orders, reports and information
- documentation of the communication
- equipping of the control points with office equipment
- institution of information services