

# The Luftwaffe as a System Element of the Bundeswehr

Without any doubt, the beginning of the 21<sup>st</sup> century's second decade is characterised by the effects of the global economic and financial crisis as well as security and stability problems of the international community of nations. Against this demanding background the armed forces and their strategic planning are faced with major challenges. Status situations on the margin between regional instability and crises, which cannot be identified clearly and distinctly, lead to increasingly complex and security political tasks for the armed forces. As a result the respective demands regarding reactive capabilities and flexibility, effect and assertiveness of modern armed forces have to be responded to adequately and have to be considered as part of the Bundeswehr's continued development.

Nevertheless, the prevention of crises and conflicts is as difficult as manifold are their origins. The perception of today's missions occasionally leads to assigning military operations on the ground the highest importance. One has to consider, however, that control of the air space is a basic requirement for the deployment of forces. Besides, if one analyses the current mission in Afghanistan more precisely, the necessity of air forces as a guarantor of operational freedom in this complex environment becomes obvious – in addition to military presence on the ground.

In the perception of a possible opponent the exclusive capability for the projection of military power from the air can be a decisive criterion for the intensity or openness of his operations. This is why also air forces with speed, range, flexibility and effect as their inherent characteristics significantly influence hostile operations with regard to space, time and power. And this applies for asymmetric conflicts, too.

## “Perpetual” Protective Contributions of the Luftwaffe

To look at only the obvious conflict scenario, namely the deployment of the Bundeswehr for international conflict prevention and crisis management operations, would cover just a fraction of the subject and would reduce the role of the armed forces to only one pillar of their “raison d'être”. The own national defence capability as an elementary feature of armed forces remains to be the precondition of security political freedom of action. As part of the sovereign preservation of the in-

tegrity of the German air space the Luftwaffe already today makes an important contribution for the collective national security precaution of the Federal Republic of Germany.

In light of the current development of threats and the proliferation problems, particularly in the segment of ballistic missiles, a serious air threat to the German territory can ultimately not be excluded. In the medium

term this requires an extension of the air defence capabilities for the protection of the German air space in the areas of missile defence and space observation. This also holds true for the integrated air defence with our NATO partners. As part of our duties in the Alliance we have, for instance, already successfully completed the third mission in the course of the air policing operations for the Baltic States. In the



The Chief of Staff, German Air Force, LtGen. Aarne Kreuzinger-Janik (right) with the German Minister of Defence, Dr. Karl-Theodor zu Guttenberg. Photo: ddp

course of this year the Luftwaffe will set another example for the response to Alliance duties by its participation in the protection of the Icelandic air space. Additional permanent tasks include the provision of military search and rescue services for own and allied forces and the German contribution in the area of nuclear issues.

## The Luftwaffe in Foreign Deployments

Apart from the tasks already mentioned the Luftwaffe has to make contributions in all phases of foreign operations by rendering support to land and naval forces. Presently some 800 Luftwaffe staff are involved in almost all out-of-area deployments of the Bundeswehr. The focus continues to be the ISAF operation in Afghanistan. For the commander of the ISAF troops the Luftwaffe provides the critical capability of tactical reconnaissance for the entire Afghan territory with six TORNADO RECCE aircraft. Our forces are capable of quickly generating reconnaissance results for the whole of Afghanistan, with a rapid change of focus, if required.

Since October 2009 we have been able to even improve the capability contribution of the Luftwaffe through the use of the new RecceLight reconnaissance pod. Apart from a clearly improved quality of the results we now also have the capability of near-real time image transmission from the aircraft to the ground stations for rapid evaluation. The TORNADO RECCE make an important contribution to a timely situation assessment at different command levels, thus directly serving the protection of own troops, which – on the basis of the acquired data – are able to identify threats early.

In close cooperation with the army the existing reconnaissance assets have been enhanced at the tactical level by the HERON 1 UAV since spring 2010. The urgently required capability for nearly continuous surveillance and reconnaissance serves, above all, the better effectiveness of friendly forces on the ground. HERON 1 is not a replacement for the TORNADO RECCE, it rather provides a complementary capability.

In the air transport area several TRANSALL aircraft, meanwhile assigned to the Mazar-e-Sharif air group, have been in use for several years, one of which is in permanent MedEvac standby readiness. With almost 50% of the transport capacity the Luftwaffe contributes the largest contingent for ISAF air transport within Afghanistan.

To safeguard air operations and the airport of Mazar-e-Sharif, the Luftwaffe deploys its specialised force protection forces. Besides, the Luftwaffe supports mission preparation training of partner nations as well as their deployment in Afghanistan, thus enabling the deployment of infantry forces from Armenia and



RECCE TORNADO in Afghanistan.

Photo: ISAF

Mongolia in international coalitions at the Kunduz and Feyzabad bases.

The Federal Minister of Defence has emphasised that training of Afghan security forces is key to mission success. Here the Luftwaffe makes another important contribution. Since November 2009 forces from the anti-missile defence troops have delegated an Operational Mentoring and Liaison Team for Afghan forces in Kunduz in order to provide for the operation and organisation of a barracks facility. In so doing, the Luftwaffe contributes to “burden sharing”, even beyond its core tasks.

In addition to ISAF one should also consider the NATO, UN and EU deployments in the Balkan states and in Africa. For many years, Luftwaffe personnel have made important contributions for Germany here. In particular individual staff, which in many cases has to operate nearly autonomously under difficult conditions and in observation missions that are hardly recognised by the public, has earned our respect.

## The Luftwaffe in Transformation

Currently the Bundeswehr is in a critical transformation phase, which rightly requires a clear and efficient mission orientation, particularly in light of the economic and financial crisis. We have to ensure a permanent balance between missions, tasks and capabilities on the one hand, and the financial preconditions on the other.

In the last few years the Luftwaffe has been subject to consistent, continued and future-oriented development in order to ensure a reliable and effective contribution to the national security of Germany, both in the framework

of foreign deployments and for the immediate protection of German citizens on German territory. Based on the political and military strategic directives we have defined and implemented a clear operational objective for the development and enhancement of our capabilities. Capability contributions, which had to be “tailor-made” in response to individual mission requirements, have provided for adequate use of forces at limited resource capacities. With this approach we achieve higher flexibility and better mission effect while in parallel reducing the number of our weapon systems in accordance with the situation. As could be proved in Afghanistan, our modularity has provided best proof of its value and, in the meantime, has been accepted as a development principle of the Luftwaffe.

## Examples of Successful Transformation Activities

### *Matrix Organisation Air Power Centre (Luftmachtzentrum – LMZ)*

As part of the transformation of the Bundeswehr the Luftwaffe makes a decisive contribution to the continued development of “air power”. Due to sharp interfaces and lacking institutional coordination the speedy implementation of new ideas and technical innovations into visible progress turned out cumbersome and time-consuming in the past. Above all, the coordination with operational requirements – while utilising expertise at all levels – often appeared difficult. A crucial objective of transformation is the clear reduction of the ‘time to market’ period and the creation of result-oriented procedures for continued development. Ongoing experiences and interests/demands of the task groups have to be im-

mediately considered for the continued development, and – in return – the findings from conceptual and experimental developments have to be rapidly considered for operational activities.

It is the objective of the Air Power Centre to comply with this approach, without giving up the inherited separation between “operational tasks” (Air Forces Command) and the conceptual/comprehensive tasks of continued development (Air Force Office). Here the Air Power Centre acts as an interface for these elements. With the Air Power Centre we have established a central element for effective and future-oriented development of the Luftwaffe. The General for the Continued Development of the Luftwaffe in parallel assumes the position of a “secretary” of the Chief of Staff, Luftwaffe, with development as his central responsibility. Under a consistent, dedicated management and coordination this allows for the effective planning and implementation of the Luftwaffe’s transformation in accord with all military service branches and associated working groups as well as considering international developments.

#### **Inter-Ministerial Cooperation**

Another example for successful transformation activities of the Luftwaffe is the establishment of the national “Sicherheit im Luftraum” security command and control centre as part of the adaptation of organisations and procedures. It was founded following the 09/11 attacks in January 2003 in Frankfurt and associated with the NATO Combined Air Operations Centre 2 in Uelzern. It is an inter-ministerial institution in the subordinate structure of the Ministry of Defence, the Home Office and the Federal Ministry for Traffic and Urban Development, responding to the NATO requirement for a “National Government Authority” for the management of sovereign national air tasks.

In the case of a suspected or stated terrorist misuse of civilian air vehicles all responsibilities, including those of forces subordinate to NATO, are assigned to the respective nation through “Transfer of Authority” (TOA) by the Combined Air Operations Centres following initial tactical measures. This responds to the demand for complete national responsibility (owing to political and legal implications) for the defence of terrorist attacks in air space.

In this case the national “Sicherheit im Luftraum” security command and control centre ensures a permanent situation control and command capability as well as providing advice for political decision makers. All information of relevance for a common operational picture for the security of the German



A Quick Reaction Alert (QRA) of an EUROFIGHTER.

Photo: Luftwaffe

air space is acquired and processed by several functions in the ministries involved. With this kind of information the “German Air Defence Commander”, usually the Chief of Staff, Air Force, can provide the political decision makers with a comprehensive operational picture as decision support for far-reaching defensive measures.

#### **Cooperation with Industry**

The Luftwaffe’s mission logistics, providing dedicated logistic support for the weapon systems of the Luftwaffe, has also been subject to successful transformation. Currently the introduction of many new weapon systems, which are being fielded in parallel in volumes larger than ever before, as well as reduced numbers of systems, small fleets with increasing type varieties and complexity as a result from high technology, represent critical challenges.

The Luftwaffe’s responses to these challenges are based on the principles for concentration, cooperation and orientation towards core capabilities and expertise. In the course of the optimisation of the Luftwaffe’s weapon system logistics new structures are being implemented. Mission-dedicated support of task groups and the industry’s own assessment and service capabilities have to be maintained. Not only for Germany represents a powerful national defence industry an important political security and economical factor; moreover it is an absolute requirement for the Luftwaffe with regard to the logistic support of airborne weapon systems of all branches of the forces.

These objectives are primarily met by cooperative working patterns between the Luftwaffe and industry. Bundeswehr soldiers and industrial personnel cooperate in teams with

equal rights in the maintenance and system support for weapon systems in joint work places of the defence industry. The concentration at one single place under industrial management takes advantage of the accumulated capabilities for the operation of the weapon systems and avoids investing – and thus wasting – capacities in parallel. Through internal optimisation and the involvement in cooperative organisations with industry we have saved 25% in manpower in five years. We will continue this way of cooperative efforts and will evaluate more areas for such applications.

#### **Merging Operations and Logistics**

Another example for successful transformation is the combination of logistics, armament and operation under the roof of the Luftwaffe’s Weapon Systems Command, taking into account two findings: In the development and fielding of modern airborne weapon systems the development and operational phases overlap to an ever greater extent, and critical determining conditions for the operation after the system’s service introduction are defined early in the development process – like fixed price agreements for demonstrators. Life-Cycle-(Cost) Management from one source throughout all phases of a weapon system’s life cycle is achieved through the streamlining of processes and organisational structures.

### **Major Objectives for the Future Orientation of the Luftwaffe**

It is part of a “joint understanding” that the way that the Luftwaffe has developed in the

past few years is path breaking; at present aspects of joint tactical fire support and their extended understanding in the “Joint Fires” concept on the way to a network centric operational capability are part of the considerations. With regard to the necessary long-term and strategic development of air power in light of the framework requirements mentioned above the Luftwaffe partly acts as an impact provider and driver of new development lines. In the following I would like to consider three important areas as examples.

### *Unmanned Aerial Systems (UAS)*

Decision-making on the basis of profound information is critical for political and military leaders at all levels. As high-technology capability platforms UAS make an important contribution to the required information superiority, which leads to an operational advantage if applied consistently. The Luftwaffe is introducing unmanned air vehicles based on the assumption that first of all joint capability gaps in intelligence and reconnaissance are to be bridged. Not only is this of exposed conceptual importance for the continued development of the Luftwaffe, it also is of major and particular relevance for the efficient and effective support of the Bundeswehr’s current deployments. From the point of view of the Luftwaffe the areas of wide-ranging, image-generating and signal-acquiring reconnaissance as well as image-generating reconnaissance throughout the mission theatre represent capability priorities for the entire Bundeswehr and thus have to be dealt with firstly. Moreover, UAS are important multipliers for the future capabilities of the armed forces in network centric operations. Besides, the Luftwaffe is considering the use of UAS in the capability categories of “Survivability and Protection” and “Mission Effect”.

### *Missile Defence*

The increasing proliferation of weapons of mass destruction and associated carrier platforms has already been mentioned and not only represents an increasing threat for the troops in the mission theatres, but for the security of our home country, too. The threat represented to Europe by short- and medium-range missiles has developed faster than expected only few years ago. As part of a national risk and security assessment this development has to be responded to with extended capabilities in missile defence (MD).

The Luftwaffe’s essential missile defence capability is a suitable basis to address the highly prioritised protection requirement which, in light of the potential threat, is under-

standable. With the provision of an essential missile defence capability the Medium Extended Air Defence System programme (MEADS) will make an important contribution in this respect. The Missile Defence Initiative of the President of the United States of America could form the core of a NATO MD system. The United States have signalled that along with a significant contribution from the United States, Europe is expected to make a contribution in the segment of systems covering shorter ranges. Here we have to involve ourselves with our existing systems (Patriot) and capabilities under development (MEADS), opening up the possibility for continued development towards longer range systems.

### *Use of Outer Space*

Already today the use of the outer space is a key technology for modern industrial societies. For Germany as an export-oriented economic factor satellite communication is an essential basis for prosperity. Besides, space applications in terrestrial observation and navigation and their associated infrastructures have become indispensable factors for the German economy, also providing essential contributions in many segments of national security. The secure access to outer space as well as its unlimited use, thus securing the functional operability of space-based assets, is of strategic relevance. As the failure of space-based services would increasingly cause serious economical and security political consequences close cooperation with regard to “networked security” seems advisable. The protection of space-based assets is increasing-

ly gaining in importance as part of national security precaution.

Without doubt, the availability of satellite-based services for communication, reconnaissance and navigation is developing as a basic precondition for the functional operability of modern armed forces. Effective space applications, the surveillance and control of the use of the outer space as well as space-based reconnaissance are indispensable for independent strategic decision finding in accordance with the respective situation. With regard to network enabled operations the use of outer space is gaining particular importance for the Bundeswehr. This is based on the assumption that in the future the control of the air space will be mainly dependent on whether or not the use of the outer space environment for own purposes can be provided for as well. The Luftwaffe considers itself as an impact driver for the other service branches in these areas. In particular in the area of space reconnaissance and its national implications we have made first efforts towards the development of respective capabilities.

## **The Luftwaffe as an Employer**

The statement is true both for the future orientation and here and today: The Luftwaffe’s accomplishment of its missions and tasks requires state-of-the-art technology and people who have the technical capability of controlling these weapon systems in a multinational environment. Air forces can only respond to their tasks with responsible, motivated, skilled



Patriot Missile Defence System.

Photo: ES-Archiv

and highly educated personnel. The results of the technology-oriented education are already visible: 60% of the Luftwaffe personnel are longer serving officers and sergeants.

Finding suitable men and women and qualifying them for a demanding task profile as well as generating adequate conditions for effective and long-lasting service – for aircraft operators in particular – are of central importance for the mission preparedness of the Luftwaffe and represent a major challenge – apart from the procurement and operation of sophisticated weapon systems.

Efforts in the human resources sector are very comprehensive: Every year some 6,000 longer-serving male and female soldiers for specific career patterns and over 270 different job descriptions have to be recruited. Besides the Luftwaffe wants to recruit more than 700 professional soldiers, both female and male, every year.

The projected results of the demographic development with a clear reduction of the population aged between 18 and 25 – namely those who can primarily be approached for a medium- or long-term service in the Luftwaffe – have an important influence. This will have a direct effect on the recruiting potential; besides, the presence of the Luftwaffe with bases throughout the Federal Republic of Germany has been drastically reduced – and with that the possibility of personal contacts between the forces and the civilian population. The already ongoing competition for qualified employees on their way into the information and knowledge society will become fiercer, envisaging a “fight for smart heads and skilful hands” in all segments of the labour market.

While civilian companies can occasionally offer special financial “baits” in their search for qualified personnel, the Luftwaffe as an employer can advertise the chance for working in a highly interesting, diversified, secure and solidly paid job in a qualified team and with the objective of high-value and generally accepted professional certifications and academic qualifications.

For the qualification of the Luftwaffe’s technical personnel alone almost 900 training courses on more than 300 different educational subjects are carried out per year. With a view to adult-suitable learning modern training technologies and simulation systems improve, facilitate and rationalise the education in the Luftwaffe – also considering financial requirements. “Tele-education” is in the focus of current development efforts. Tele-education is expected to increase both quality and economy of the training and education process and is to enable flexibility with regard to location and time. Through the use of leading-edge applications (like scenario generators) simulation technology as part of the Luftwaffe educational concept contributes to secure operational expertise economically and sustainable.

With regard to the security of our troops and the costs of our weapon systems the importance

of best qualified personnel must not be underestimated. Mistakes and failures can already have consequences during peace time operations. Even if technical capabilities are of particular importance for the operation of an air force the social competence of the soldiers has also to be taken into account. The management of complex processes and procedures as well as the interaction with a heterogeneous group of experts whose contributions are crucial for mission success requires a high level of leading skills and responsibility. Apart from the professional qualification the training of so-called “soft skills” is among the Luftwaffe’s educational objectives. The teaching of basic, secondary and advanced capabilities in leadership, the use of media, management and methodology is of similar importance as the acquisition of functional skills.

In their respective teams, based on solid and innovative education and with consideration of political developments the male and female soldiers of the Luftwaffe provide a responsible service for our country. More than in the past, however, the requirements that the soldiers of the Luftwaffe have to respond to are subject to permanent changes due to security political and technological developments. Their acting is characterised both by the complexity and dynamics of multi-dimensional tasks, political importance and public effects and the necessity of processing extensive information in a time-critical decision process. With that the Luftwaffe and the forces are faced with major challenges in light of the non-reversible demographic development in our country.

## Summary

The challenges, which we are facing and which we will most likely be facing in future deployments require a broad capability spectrum on the military side, which can only be achieved and effectively be implemented in a truly joint cooperative approach. With regard to the available resources not each branch of the service has to be in control of all capabilities, rather, responsibilities can be shared. The unique capabilities of air forces with their highly skilled personnel provide a decisive basis for every military operation. As a matter of principle, the control of the air space – starting from air traffic control and ranging through to air space surveillance and secure operations in order to generate military effects – is an essential prerequisite for the own political freedom of action and the freedom of operation for forces on missions.

For the political decision maker the Luftwaffe’s capability for global relocation offers a broad spectrum of options, starting with humanitarian support missions and ranging through to the relocation of military forces for combat missions. This is the prerequisite for the freedom of action at political levels with the required flexibility, at any location.

Moreover, in the context of global aid-, rescue- and evacuation operations, the Luftwaffe’s air transport assets provide for the protection of German citizens, even in remote regions of this world. Also, air forces contribute to an uninterrupted rescue chain for injured civilians and soldiers to medical care institutions, timely and even facing hostile threats.

Essentially, by their mere presence air forces provide for additional inherent action options on missions for a successful joint command execution. Through early presence and/or graduated effects air forces enable robust or de-escalating responses depending on how the situation develops. The Luftwaffe has a particular ability to quickly react to almost all threats posed by an opponent. In stabilisation missions with large theatres of operation the immediate presence of air forces generates a protection effect for friendly forces on the ground, without necessarily having to deploy weapons. If considered necessary by the forces on the ground, however, the air forces can quickly deploy weapon power over long distances, even in such large theatres.

Finally, it has to be stated that the Bundeswehr is a decisive element within the spectrum of political action options, with the Luftwaffe making an important contribution to national security precaution. Apart from the immediate protection of the German territory this encompasses essential capabilities as important contributions to missions. Based on an international/multinational coalition capability the Luftwaffe offers fast and flexible operational options and makes a significant contribution to decision-making and the freedom of action and operations.

In future, the Luftwaffe will continue to regard itself as a service provider decisively supporting the Bundeswehr in the accomplishment of missions through tailor-made capability contributions with comprehensively trained personnel. This also reflects my objective for the continued development of the Luftwaffe. Based on this objective the Luftwaffe has adopted innovative and future-oriented development impacts in order to strengthen the entire Bundeswehr as a system.

As a political instrument the German armed forces have to have a balanced capability profile, which is in accordance with the Alliance partners. With their orientation towards multinationality air forces play a central role and contribute dedicated capabilities to the armed forces as “force enablers and multipliers”. In the best interest of a secure continued development of the Bundeswehr it will have to be made sure that this instrument will continue to be effectively available in support of political objectives in the future. Investments in the Luftwaffe have been and will continue to be an important contribution for Germany’s foreign political freedom of action. ■

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