



*Congratulations on  
Prof. Dr. Manfred Held's  
75-year-old Birthday*



Prof. Dr. Manfred Held has earned a distinguished reputation in the field of terminal ballistics and diagnostic techniques, as ultra high-speed photography, flash X-rays, development and use of sophisticated streak techniques, and for the analysis. He is an international recognized authority on dynamic response of materials, advanced armor, and anti-armor. Prof. Dr. Manfred Held has also been responsible for directing many warhead systems in research and development and systems analysis efforts, including target vulnerabilities and weapon damage mechanisms.

He has published numerous technical reports and more than 450 articles in scientific journals and symposium proceedings. Holding over 130 patents, Prof. Dr. Manfred Held is credited with numerous inventions including bulging armor and explosive reactive armor. He has also directed programs and managed concepts in and tests of ammunitions, dispenser sub-munitions, tank defense systems, and anti-air warheads and dual staged warhead systems.

Prof. Dr. Manfred Held received his Ph.D. in 1959 from the Technical University Munich and was awarded Professor in 1991 from the Military University Munich for his lecturing on terminal ballistics. Retired now, Prof. Dr. Manfred Held consults in Germany for his company and still conducts research programs with great pleasure and success.



## Personal Information

Birth Date: 28.09.1933

Languages: German, English

Hobbies: Working

## Education

1957 Graduation to Dipl.-Physicist at Munich Technical University

1959 Graduation to Dr. rer. nat. at Munich Technical University, with Thesis on  
"Absolute Zuordnung von Übergangsmomenten in komplizierten Molekü-  
len mittels Messung des Fluoreszenz-Polarisations grades"

1959/1960 Assistant Professor Max-Planck-Institut for Spectroscopy Gottingen

1991 Honorarprofessor at the Universität der Bundeswehr, Munich

2006 Honorarprofessor of Nanjing University of Science and Technology

## Professional Experience

Since 04.1996 MBDA-SYSTEMS (MESSERSCHMITT-BKOW-BLOHM GMBH)  
in Schrobenhausen

Activities:

Measuring Techniques

Development of Flash-X-Ray Units

Development of Raster-Oscilloscopes

High Speed Photography

## Specialties

Penetration Mechanics

Warhead Development

◆ Blast Charges ◆ Shaped Charges

◆ Fragmenting Charges ◆ Multi-P-Charges

## Research

Inhomogeneous and/or High Energetic HE's

Initiation Phenomena

Wave Shaping

Blast Effects

Shaped Charges

Cutting Charges

Projectiles Charges (EFP)

Aimable Fragmenting Charges

◆ Velocity Enhanced ◆ Mass Focused

Armor Mechanisms

Fuze Systems

◆ Detonators ◆ SAFU ◆ Sensors

## Further Activities

NATO-COMMITTEES

NATO Industrial Advisory Groups (NIAG)

## Lecturing on Terminal Ballistics

Military University Munich

## Publications

Over 450 unclassified Publications in the field of Detonic, Warheads-Mechanics,

Fuzes, High Speed Measuring Techniques

## Honors

"Coleman Award 1986" from United Kingdom for consistent excellence in  
advancing new optical diagnostic methods

"Dieselmedaille" 1986 for numerous very valuable inventions