

HGU-55/P  
FIGHTER / ATTACK FLIGHT HELMET



# GENTEX®

*The HGU-55/P fighter/attack flight helmet is designed to offer protection for today's high performance aircraft. Designed as a platform for eye protection, oxygen masks, communications, and various helmet mounted devices, the HGU-55/P series is a versatile helmet available in several configurations.*

*The standard HGU-55/P with a fiberglass or Kevlar shell is ideal for multi-place aircraft and trainers. A lightweight version constructed with Graphite/Aramid material utilizes an improved shell design to reduce head-borne weight by approximately 4 ounces while maintaining its strength. The Lightweight HGU-55/P helmet is designed to meet the rigorous demands of a High-G environment.*

*Gentex also produces a Lightweight HGU-55/P Combat Edge version, which incorporates an air bladder behind the liner, high speed visors, and anti snag receiver spacers for the ultimate high-speed, high-G environment helmet.*



*Specially designed to improve tolerance to high-G maneuvers and prevent G-induced loss of consciousness (GLOC), the COMBAT EDGE helmet is the standard for all U.S. Air Force F-15 and F-16 aircrew. This technologically advanced ensemble provides pilots with a decisive edge in combat by providing greater endurance during high-performance maneuvers up to +9 Gs while reducing fatigue that can compromise mission performance. The Gentex HGU-55/P COMBAT EDGE helmet is delivered with the bladder installed, the shell predrilled for NVG mounts, features our High Speed Visor Kit and X Liner, and includes anti-snag bayonet receivers, reducing technician time and cost during helmet buildup. While COMBAT EDGE does not replace the straining maneuver of tensing the upper body muscles and abdomen normally used during high-G flight, it significantly reduces the effort required to execute it and results in the ability to perform more high-G missions per day.*

### **Standard Configurations & Optional Helmet Components**

- **Edge Roll:** A soft leather edge roll covers an open cell foam core around the entire periphery of the shell for a comfortable fit, and reduces the amount of noise that enters the helmet. Visor buffers and bump stops are cemented to the shell to provide for stowing of the visor and to protect the shell surface during visor operation.
- **Energy Absorbing Liner:** Energy absorbing, expanded polystyrene beads pressure molded to match the dimensions of the shell, the liner provides the primary impact absorbing medium.
- **Liners**
  - **TPL® liner:** The Thermo Plastic Liner is the original custom fit liner in use since 1983. This is a thermo plastic inner core of several layers with a removable and washable padded cover.
  - **SCL® Liner:** The Super Comfort Liner utilizes the same thermoplastic core layers for custom fitting, but includes a much more plush cover for increased comfort.
  - **X Liner™:** For the ultimate in comfort, we offer commercially the X Liner helmet comfort liner. An optional helmet component, the X Liner consists of two separate densities of comfort foam, the inner is soft and pliable for comfort and the outer is more dense for improved protection. The X Liner has a unique shape to allow airflow which increases heat dissipation by almost 50% over previous liner systems. The cover is constructed with revolutionary X-Static® fabric which is anti-microbial. The X Liner is more stable, lighter, and more comfortable than currently available liners.
- **Communications:** Communications are built to each customer's requirement, but include standard plastic earcups for maximum noise attenuation in high noise environments. We also offer an optional leather covered earpad for greater comfort.



- **Integrated Chin/Nape:** A one piece strap assembly is threaded through the shell and adjusts at the chin strap. Cross straps threaded through the nape strap pad adjust simultaneously with the chin strap to provide a snug yet comfortable fit ensuring helmet stability and retention, especially when night vision goggles are attached.
- **Visors:** In addition to the standard clear and neutral gray visors, the HGU-55/P series has several optional upgrade visor options.
  - **Gradient:** This visor allows the unique ability to have the sun protection of a neutral visor along the top, while leaving the higher light transmittance of a clear lens along the lower portion to make it easier to read gauges.
  - **High Contrast:** The High Contrast Visor (HCV) utilizes blue blocker technology to provide better vision in hazy, foggy, overcast conditions, by blocking blue light wavelengths, enhancing objects or other aircraft in these low visibility conditions.
  - **Amber:** The yellow color Amber lens is less expensive and provides a lower level of performance than the HCV.
  - **Laser:** Laser visors are available in several different wavelengths and levels of protection, depending on the customer's requirement.
  - **High Speed Versions:** The Lightweight HGU-55/P series also has available a High-Speed version of each of these visors. This High-Speed version comes in a MBU-20/P mask trim, and incorporates modified straps and spacers, and a friction strip that allows these visors to remain in place during higher speed ejections.
- **Oxygen Mask Receivers:** Lightweight oxygen mask bayonet receivers are available in either metallic (bead blasted), or black finish.
- **Anti-snap Receiver Mount:** As an additional upgrade, Gentex offers a snap resistant bayonet receiver mount that reduces the hazard of a riser catching on the bayonet receivers during an ejection.
- **HGU-55/P series Performance:** The HGU-55/P series will meet the performance requirements of MIL-H-87174 "Helmet, Flyers, HGU-55/P".
- **Impact Energy Attenuation:** The HGU-55/P series helmet assembly with a TPL, SCL, or X Liner installed, limits the acceleration imparted on a test head form to less than 400G with an input energy of 35 foot-pounds, single impact, hemispherical anvil, using ANSI Z90.1 methodology as specified in MIL-H-87174.
- **Windblast Protection:** When tested as specified in MIL-H-87174, the complete



**helmet assembly does not tear away from the head form, loosen or break during windblast velocities of 450 knots (+/- 20 knots) equivalent air speed (KEAS) at these attitudes:**

- Head on
  - 45° yaw to the right
  - 45° yaw to the left
  - 30° pitch to the aft
- **Penetration Resistance:** The helmet assembly with energy absorbing liner limits penetration of a 16 oz. test bob into the shell to not more than 0.250 inch from a drop height of 10 feet when tested in accordance with MIL-H-87174.
  - **Visors:** Gentex visors are made of polycarbonate and meet all the performance requirements of MIL-V-43511. They have an abrasion resistant coating on the front and rear surfaces in accordance with MIL-C-83409. The high speed visors have been windblast and sled tested at speeds exceeding 600 knots equivalent air speed (KEAS). All Gentex visors provide 99% protection from UV (a), (b), and (c). See the different options listed above.
  - **Weight\***  
Lightweight HGU-55/P  
Medium      2.23lb (1.013 kg)  
Large        2.37lb (1.076 kg)  
X Large     2.48lb (1.126 kg)

**\*Weight includes painted shell, leather edge roll, buffer leather, lens stops, visor snap fasteners, energy absorbent liner, oxygen mask receivers, chin/nape strap, TPL liner and internal communications. Weight does not include oxygen mask or visor cover.**

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