**Russian Attack Helicopter Mi-24/35 HIND**

**SYSTEM**

**Alternative Designations:** Mi-25 or Mi-35 for exports (See Variants).

**Date of Introduction:** 1976 (HIND D)

**Proliferation:** At least 34 countries

**Description:**
- **Crew:** 2 (pilots in tandem cockpits)
- **Transports:** 8 combat troops/4 litters
- **Blades:**
  - Main rotor: 5
  - Tail rotor: 3
- **Engines:** 2x 2,200-shp Klimov TV3-117VMA turboshaft
- **Weight (kg):**
  - Maximum Gross: 11,500
  - Normal Takeoff: 11,100
  - Empty: 8,500
- **Speed (km/h):**
  - Maximum (level): 335
  - Cruise: 295
  - Max "G" Force: 1.75 g
- **Ceiling (m):**
  - Service: 4,500
  - Hover (out of ground effect): 1,500
  - Hover (in ground effect): 2,200
- **Vertical Climb Rate (m/s):** 15
- **Fuel (liters):**
  - Internal: 1,840
  - Internal Aux Tank (in cabin): 1,227
  - External Fuel Tank: 500 ea. x 2
- **Range (km):**
  - Normal Load: 450
  - With Aux Fuel: 950
- **Dimensions (m):**
  - Length (rotors turning): 21.6
  - Length (fuselage): 17.5
  - Width (including wing): 6.5
  - Height (gear extended): 6.5
  - Main Rotor Diameter: 17.3
  - Tail Rotor Diameter: 3.9
- **Cargo Compartment Dimensions (m):**
  - Floor Length: 2.5
  - Width: 1.5
  - Height: 1.2
  - External weapons load: 1,500 kg
    - (no weapons): 2,500 kg

**Protection/Survivability/Countermeasures:**
- Armored cockpit and titanium rotor head defeat 20-mm rds.
- Overpressure system is used for NBC environment.
- Infrared signature suppressors on engine exhausts. Radar warning receivers, IFF. Infrared jammer, rotor brake.
- Armored cockpit.
- ASO-4 Chaff/flare dispenser. Auxiliary power unit for autonomous operation. Main and tail rotors are electrically deiced.

**ARMAMENT**

**Fuselage/nose mount gun/ MG**
- 7.62/12.7-mm door MG

**Other Loading Options**
- AT-2/-6/-9 ATGMs (See below)
- 80-mm S-8 rocket pods (20 ea.)
- 57-mm S-5 rocket pods (32 ea.)
- 122-mm S-13 rocket pods (5 ea.)
- 240-mm S-24 rocket pods (1 ea.)
- 250-kg bombs, including FAE
- 500-kg bombs, including FAE
- Gun/MG/AGL pods (See below)
- AA-8/R-90 or SA-24AAM
- KMGU or K-29 Mine pods

**Weapon & Ammunition Types**

<table>
<thead>
<tr>
<th>Weapon Type</th>
<th>Combat Load</th>
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<tbody>
<tr>
<td>Fuselage/nose mount gun/ MG</td>
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**Mission dictates weapons configuration. Not all will be employed at the same time.**

**Guided Missiles**
- **Name:** AT-6b or AT-9/Ataka-M (pg 2-24)
- **Guidance:** Radio-guided
- **Warhead:** Tandem shaped Chge (HEAT)
- **Armor Penetration (mm):** 1,100, 800+ERA
- **Rate of fire (missiles/min):** 3-4
- **Range (m):** 400-7,000 (6,000 AT-9)

**Other Missile Types:**
- AT-6/Ataka HE, 9A2200 anti-helicopter w/prox faze

**Most Probable Armament:**
- **HIND D:** Nose turret-mounted 4-barrel 12.7-mm Gatling type minigun, 1,470 rds, 4 pods of 57-mm rockets, and 4 x AT-2C/ SWATTER ATGMs.
- **HIND E:** Nose turret-mounted 4-barrel 12.7-mm Gatling type minigun, 40 x 80-mm rockets, and 8 x AT-6C/SPFIRAL ATGMs.
- **HIND F:** GSh-30K gun on fuselage, 40 x 80-mm rockets, 8 x AT-6C ATGMs, and 2x SA-24AAMs.
- **Mi-35M2:** Nose turret 23-mm twin gun 470 rds, 40 x 80-mm (or 10 x 122-mm) rockets, 8 AT-6C (or 8 AT-9), and 2 x SA-24AAMs.

**AVIONICS/SENSOR/OPTICS**
- The ATGM targeting system uses a low-level light TV, a laser target designator, PKV gunsight for pilot, air data sensor, and a missile guidance transmitter. Some versions and specific forces have upgraded FCS.
Russian Attack Helicopter Mi-24/35 HIND continued

**VARIANTS**

**Mi-24A/HIND A/B/C:** The original -A helicopter had side-by-side seats, single-barrel 12.7-mm MG, 57-mm rocket pods, and AT-2a/b/SWATTER-A/B ATGMs. The export HIND A launched AT-3/SAGGER ATGMs. All of these missiles were manually controlled (MCLOS). The HIND B never entered production. HIND C was a trainer, without a gun pod. Nearly all of the older HIND A, B and C variants have been upgraded or modified to the HIND D or E standard.

**Mi-24D/HIND D:** This represents an OPFOR Tier 4 helicopter capability. This gunship has a more powerful engine and improved fire control system. Other upgrades include a 4-barrel 12.7-mm Gatling type gun. Rocket pods can be mounted on the inner 4 pylons, and AT-2c/ SWATTER-C ATGMs can be mounted on wing pylons. These SACLOS missiles offer superior range and operational precision over earlier versions. There are NVGs and II sights, which permit night flying but virtually no night engagement capability, except in illuminated areas.

**Mi-25:** Export version.

**Mi-24V/HIND E:** The most proliferated version. This variant represents OPFOR Tier 3 helicopter capability. It has the 4-barrel mini-gun and up to 8 AT-6/Shurm-V series ATGMs (most recent is AT-6C). It can also launch Ataka/AT-9 series ATGMs. With its heads-up-display (HUD) fire control system, the aircraft can also launch AA-8 AAMs. Mi-35 is an export version of HIND E. Mi-35O night attack upgrade with an Agema FLIR ball.

**Mi-24P/HIND F:** This gunship variant has a 30-mm twin gun affixed to right side. ATGMs are the AT-6 and AT-9 series. Mi-35P is an export version of the HIND F.

**Mi-24PS:** Ministry of Internal Affairs version, with wingtip ATGM launchers, sensor ball with FLIR night sights and loud speakers.

**Mi-24R/HIND G-1:** Mi-24V variant for NBC sampling. It has mechanisms for soil and air samples, filter air, and place marker flares.

**Mi-24K/HIND G-2:** Photo-reconnaissance and artillery fire direction variant. It has a camera in the cabin, gun, and rocket pods, but no targeting system. Upgrades to the Mi-35M standard are the Mi-24VK-1 and Mi-24PK-2.

**Mi-24PN/Mi-35PN:** Russian upgrade of Mi-24VP/35P with Zarevo FLIR FCS.

**Mi-24VP** is a Russian response to lack of satisfaction with the 30-mm gun. This variant replaces the gun with a twin 23-mm nose turret gun and 470-mm rounds. It has been fielded in limited numbers.

**Mi-24VM/Mi-35M:** The program integrates a suite of compatible upgrades. It has main and tail rotors from Mi-28, and a new engine and transmission, with improved capability for nap-of-the-earth (NOE) flight. It includes: hardpoints reduced to 4, hover rise to 3,000 m, fiberglass rotor blades, fixed landing gear, scissors tail rotor, new nav, and stabilized all-weather FLIR ball FCS. Export Mi-24VP with FLIR sights is Mi-35ML (NFI). Mi-35PM is a Mi-35P upgraded to -M standard. Indian Mi-35Ps are upgrading to -M standard.

**Mi-24VK-1 and Mi-24PK-2** upgrades for earlier helicopters to the Mi-35M standard.

**Mi-35M2:** Latest export version, and the most robust version of the Mi-24/35 HIND helicopter. This variant represents OPFOR Tier 2 helicopter capability. It has new 2,400-shp VK-2500 engines. Ceiling is increased to 5,700 m (4,000 hover). The French based FCS pod has a Chlo FLIR night sight. Armament is: twin barrel 23-mm nose turret gun, 12.7- mm NSV MG (at the cargo door), 16 x AT-6c (or AT-9) ATGMs, and 2 rocket pods. Other options include AA-8, AA-11, or SA-24 AAMs. A 30-mm nose gun is available. For tank destroyer role, exchange rocket pods for pods with 8 more ATGMs.

**Other Country Upgrades:**

**Mi-35D:** Export private venture upgrade with weapons systems from the Ka-50/Hokum helicopter. Changes include the Shkval FCS, Saturn FLIR, and up to 16 AT-16/Vikhr ATGMs. For AAM, the AA-18 would be replaced with AA-18S (SA-18/Igla-Super).

**Tamam Mi-24 HMSOP/ Mission 24:** Israeli upgrade program. It includes a TV FCS with FLIR, autotracker, and GPS. Contrary to other HINDs, the pilot sits in front, with the gunner in the rear. ATGM is the NLOS Spike-ER. The launcher can also launch SkyLight UAVs, then hand them off to ground controllers.

**Mi-24 Mk III:** South African upgrade. It has a 20-mm Gatling-type gun, and ZT-35/Ingwe ATGM. The Ukrainian Super HIND Mk II would be similar, with Mokopa.

Former WP countries V4 (Poland, Slovakia, Cz, Hungary) have agreed to cooperate on upgrades. The Polish plan includes a 3-barrel 20-mm Gatling gun and Spike-ER ATGM.

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**NOTES**

Additional missions include: direct air support, escort, target designation, security, reconnaissance, air to air combat, and anti-ship. Optional upgrades include the Mi-28's AT-9/Ataka 8-missile launcher (16 total), or Israeli Spike-LR ATGM launcher. A new upgrade is addition of a laser target designator in the FCS, which can guide semi-active laser-homing bombs, and laser-guided 57/80/122-mm rockets from pods.

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**MI-35M2**

**Name**

**Skylark**

**AT-2 Fox**

**Hermes 450**

**Duration**

2 hr

5 hr

24-30 hr

**Range**

10 km

50 km

200 km
SKYLARK UAS

2 Hour Duration, 4,600m Alt 10km range
EO/IR
MANPACK
AT-2 FOX UAS

5 Hour Duration, 9,000 ft Alt 50km range (100 relay)
EO/IR/TV
HERMES 450 MEDIUM ALTITUDE LONG ENDURANCE UAS

24-30 Hour Duration, 21,000 ft Alt 200km range plus relay
COMPASS THERMAL CAMERA/LASER RANGEFINDER
SKYFIX COMINT/DF SYSTEM
T-20 SAR/GMTI

Mission Command Training Program