



# Cheetah







# **SA 315 Cheetah powerful versatile an endearing beast**

Hybrid Alouette II and III the Cheetah combines sleekness with puckishness and gives a new dimension to rotary wing virtuosity.

Robust of form, superb performer, the Cheetah boasts of a multipurpose existence. It convincingly demonstrates wide range capabilities in civil and military missions. And what's more, with minimal adaptation it is an excellent sprayer.

A rotary winger without compare, the Cheetah springs from the world renowned works of Hindustan Aeronautics Limited having had its initiation at Aerospatiale in France.





# a lot to offer

The Cheetah is simple in concept, economic in design and rugged in construction. It incorporates the dynamic components of the Alouette III, and the light weight airframe of the Alouette II. Its power unit is the tried and trusted Artouste III B gas turbine engine. The result is an astonishingly high order of performance. The Cheetah holds the all-category altitude record of 12,360 metres. Civil and Military Airworthiness Certificates have already been received in India as well as France. The agricultural variant is currently under certification by the Director General of Civil Aviation, India.

## light weight performer

Agile and highly manoeuvrable the Cheetah is ideally suited for aerial work as a light crane. Hook a cargo sling and it will lift one metric tonne from its bowels. With unmatched hovering sense, the Cheetah excels in observation surveillance, logistic support, earth resource surveys and rescue operations.





## a veritable workhorse

The Cheetah is a glutton for hard work. Under hot tropical skies it can carry a metric tonne load under slung upto an altitude of 2000 metres over a distance of 20 km and does not baulk at carrying half a tonne of goods inside the cabin under the same hot tropical sun.

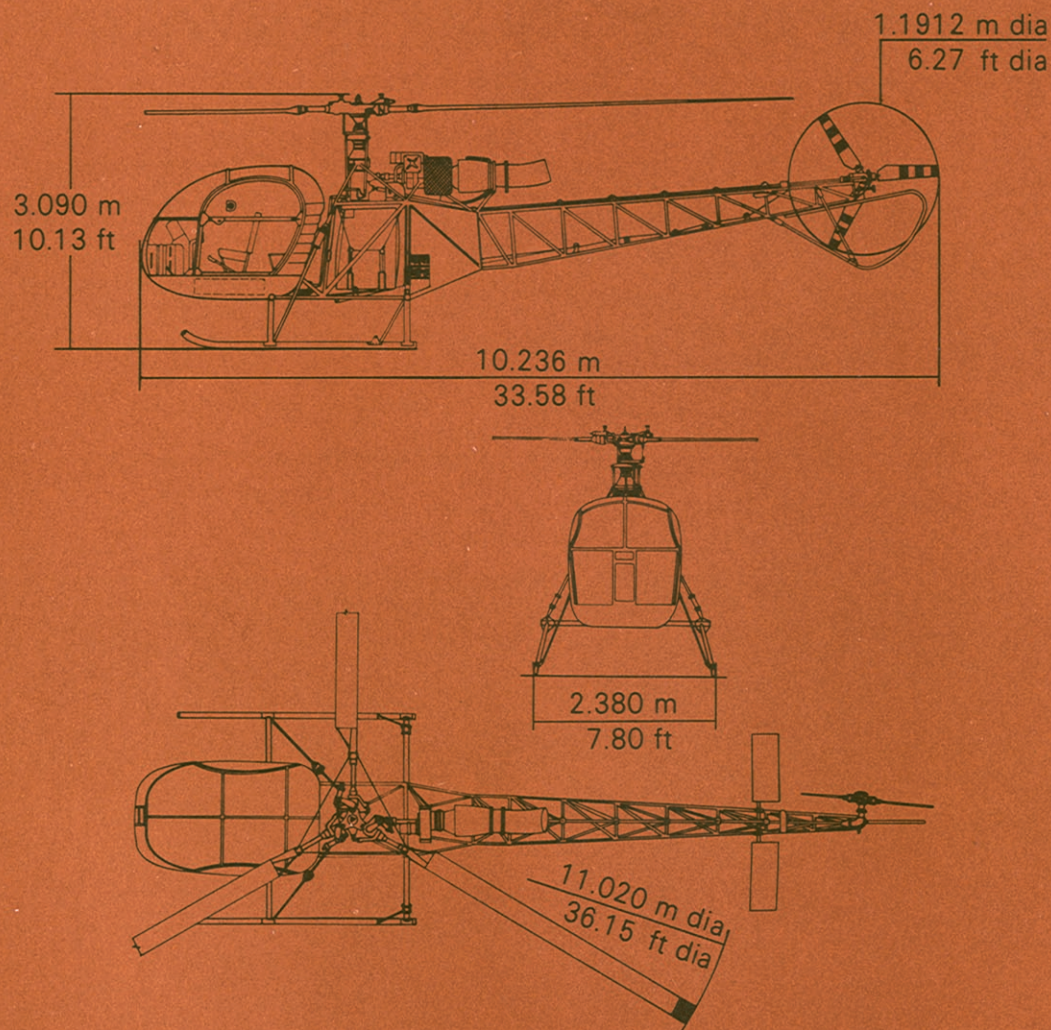


## as a passenger transport

The Cheetah comfortably seats five, operates in hot dusty plains and in cold lofty mountains with equal equanimity. A safe, economical craft it can transport men and material between manufacturing plants and work sites. In areas of difficult accessibility, the liaison role of the Cheetah is invaluable.







## dimensions

Overall length (Rotor rotating)	12.92 m	42 ft 4 1/4 in
Overall width (Rotor rotating)	11.02 m	36 ft 1 in
Overall length (Rotor blades folded)	10.24 m	33 ft 6 in
Overall width (Rotor blades folded)	2.38 m	7 ft 8 in
Overall height	3.09 m	10 ft 1 1/4 in

## weights

Standard empty weight	995 kg	2,195 lb
Normal take off weight	1,750 kg	3,860 lb
Useful load, internal	755 kg	1,665 lb
Maximum take off weight, with sling load	2,200 kg	4,850 lb
Maximum slingload	1,000 kg	2,200 lb

## the vital statistics

Perched high on the back of Cheetah the compact Turbomeca Artouste III B turbine engine provides propulsive and hover power to this redoubtable craft. Running at 33,500 rpm the engine develops 550 hp right from ground to 5000 metres. At one-third the price of petrol, kerosene fuelled Artouste affords the nimble Cheetah unbeatable economy, fire safety, exceptional manoeuvrability and high altitude performance.

A set of light dynamic anti-sand filters optionally fitted to the intakes for desert operations, enhance the engine life at a speed sacrifice of just 4 km/hr.

Engine of 750 hours TBO built at HAL can be overhauled numerously.

With 550 litres capacity light construction fuel tanks the Cheetah cruises at 3750 metres to give a ferry range of 600 km.

Cheetah is equipped with VHF trans-receiver and intercommunication sets for easy navigation.

The Cheetah incorporates the latest technical innovations, to make it an easy to fly helicopter.

- \* Hydraulic servo controls.
- \* Highly sensitive constant speed governor.
- \* Automatic starting system starting and take-off in less than 1 minute.
- \* Computer and collective pitch indicator. The pilot can immediately establish maximum take-off weight on the basis of altitude and temperature conditions. He can gauge the exact weight of the aircraft in all flight conditions. An additional calculation is possible in hover, to determine the actual gross weight of the craft.



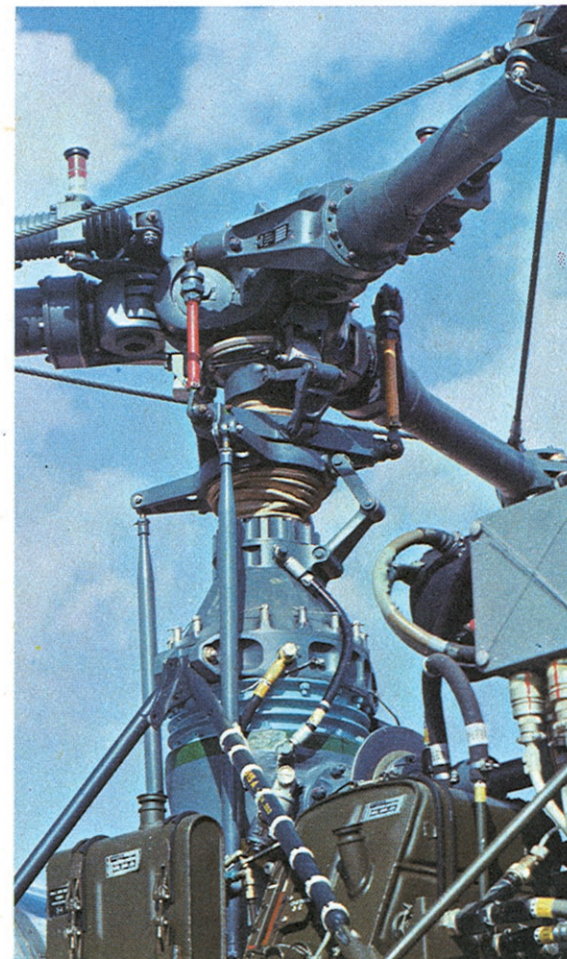
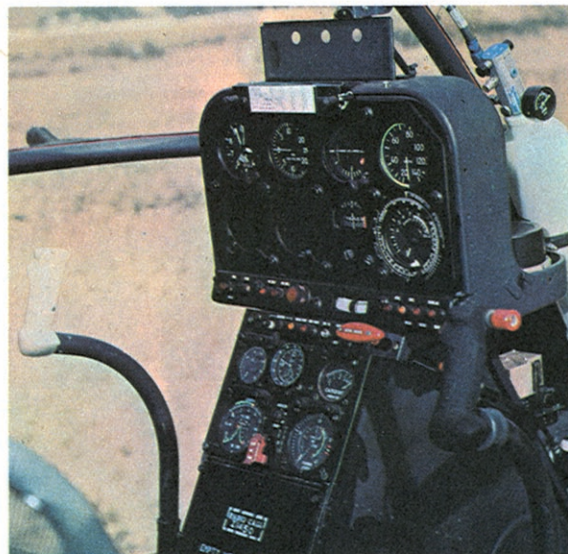
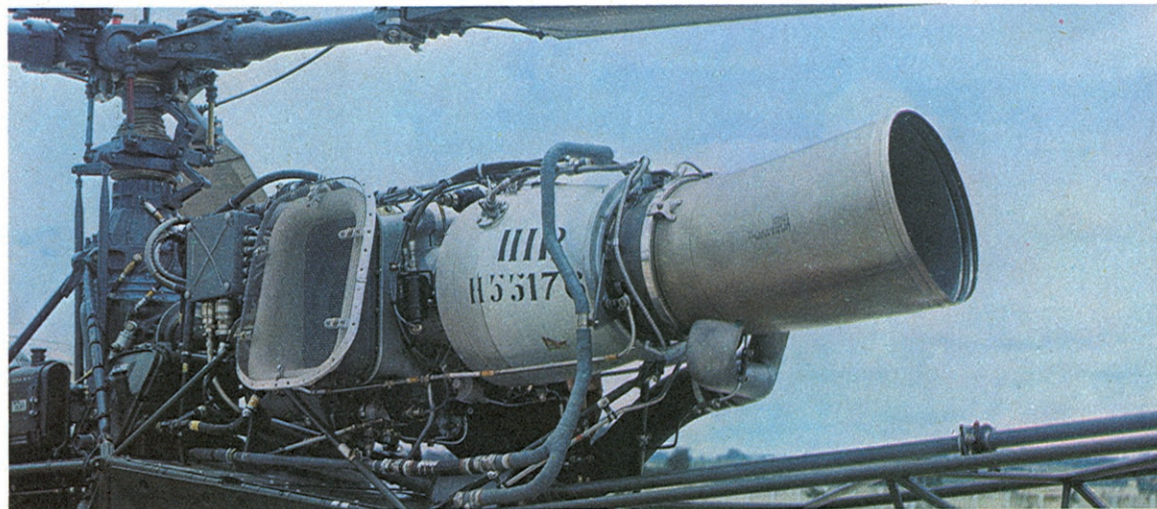
# designed to simplify your job

Maintenance is quick and easy.

- \* Few lubrication points, conveniently grouped, can be attended to in no time at all.
- \* Sight gauges so you can read off oil levels at a glance.
- \* Ground equipment needed for servicing is light and portable. Maintenance-wise the helicopter is self-supporting.

# customer service your special bonus

HAL's product support department assists and advises customers on technical support, spares support and training support.





# technical support

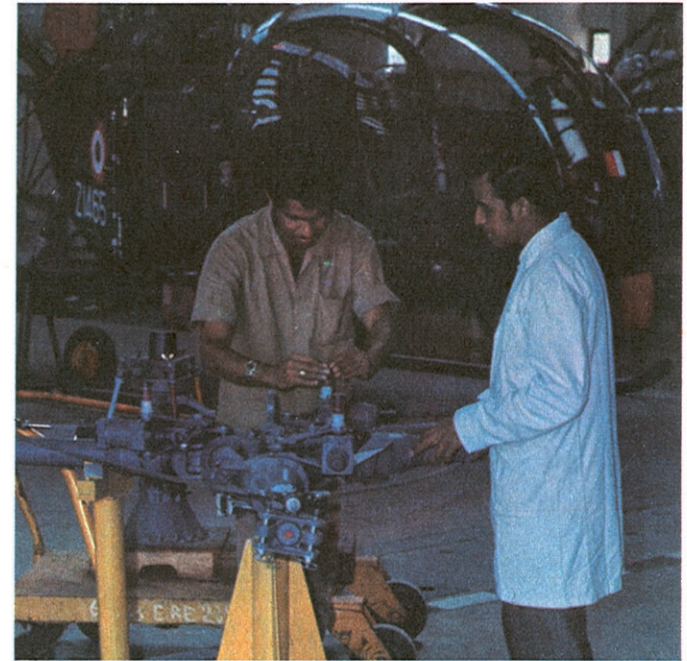
HAL will be in touch with you through service bulletins, keep you informed of operational problems and their solutions, improvements and everything else that is relevant. HAL's service engineers visit you from time to time to provide on-the-spot service. Repairs, even complete overhaul of engine and airframe including transmission assemblies will be carried out at HAL.

# spares support

Indigenously manufactured spares for the Cheetah are no problem. You'll get your spares pack for two hundred hour operations with the helicopter, and more on request, including the life components like gear boxes, coupling shafts, clutches, rotor heads, rotor blades and the lot.

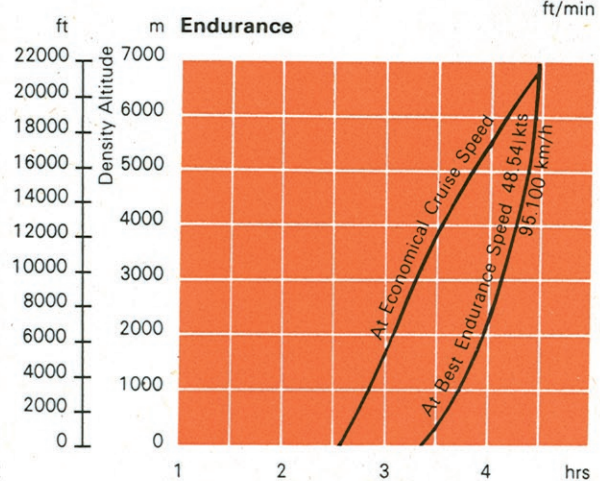
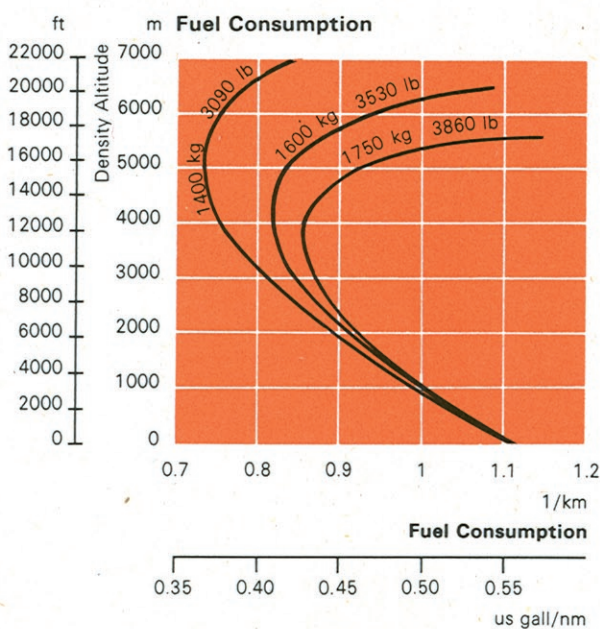
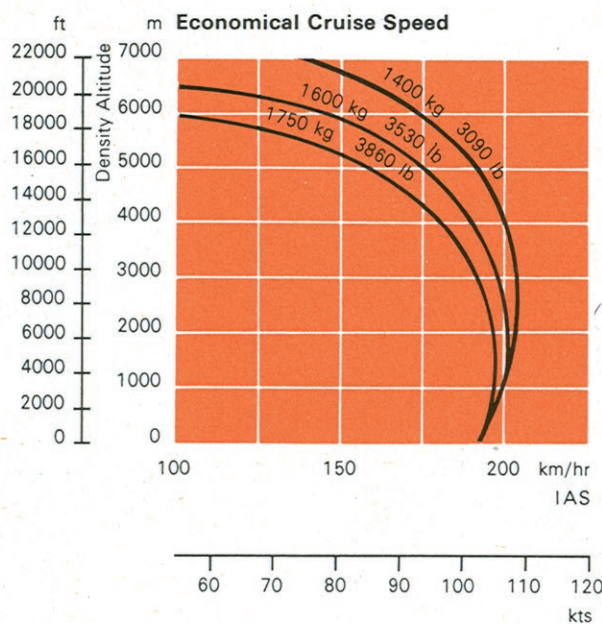
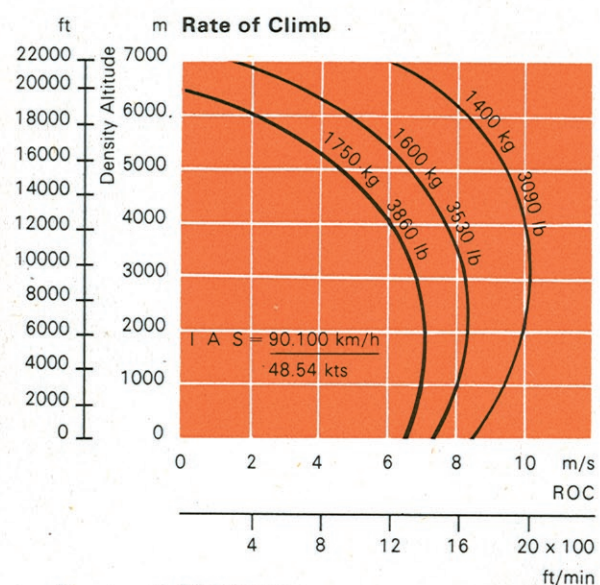
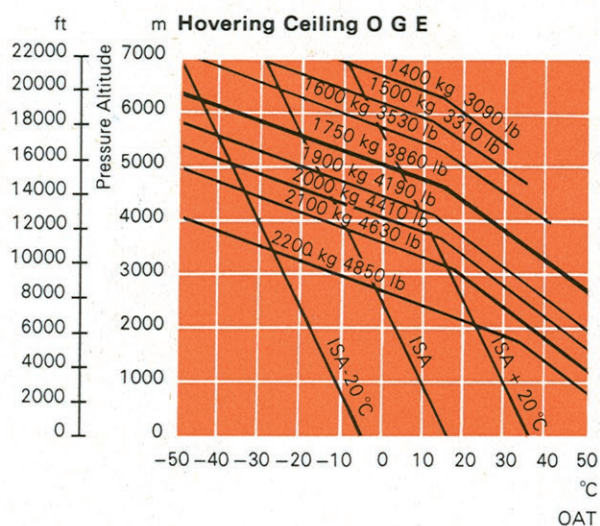
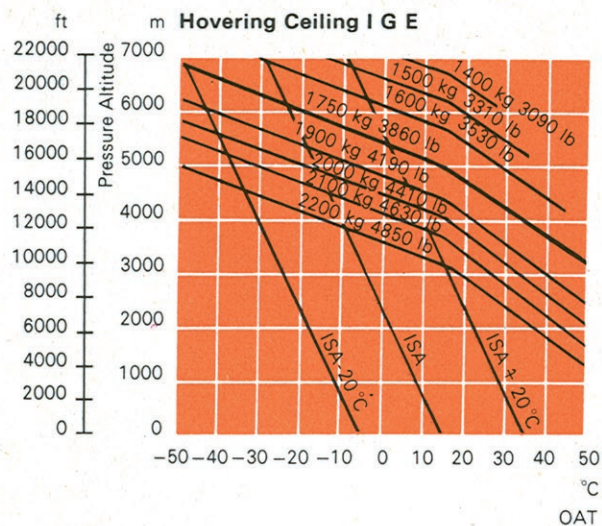
# training support

Conversion training is imparted to pilots with a civil licence. This familiarises the pilot with the basic Cheetah as well as its agricultural variant.





# SA 315 Cheetah performance





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Performance at		3,310 lb 1,500 kg	3,860 lb 1,750 kg	4,850 lb 2,200 kg
Cruise speed at SL	kts	103	103	65
	km/hr	192	192	120
Rate-of-climb at SL	ft/min	1,575	1,320	830
	m/s	8.0	6.7	4.2
Hovering ceiling IGE	ft	> 22,965	20,010	12,300
	m	> 7,000	6,100	3,750
Hovering ceiling OGE	ft	22,965	19,030	9,190
	m	7,000	5,800	2,800
Service ceiling	ft	> 23,000	21,000	12,300
	m	> 7,000	6,400	3,750





# Cheetah the farmers' friend

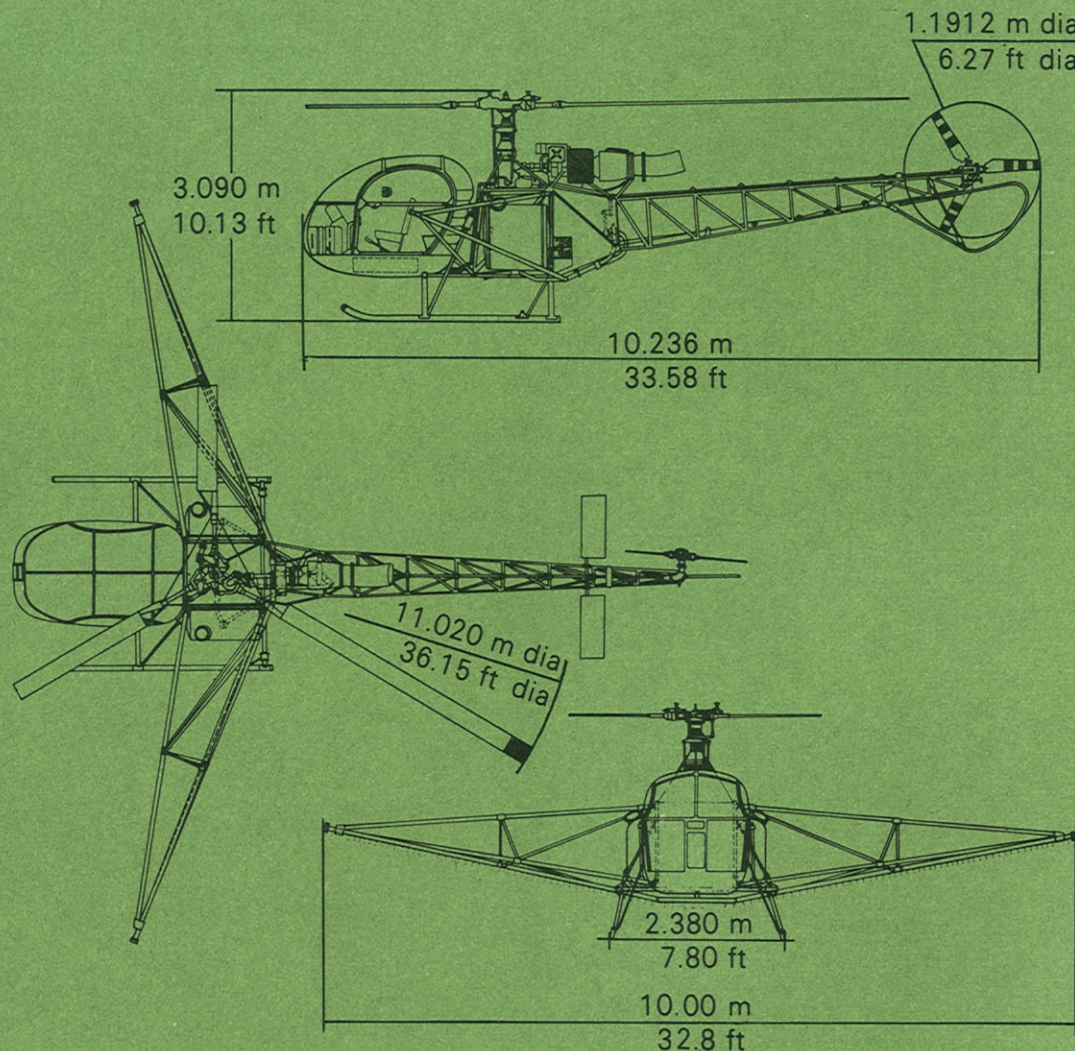
Building on the proven and reliable basic Cheetah SA 315, HAL has worked in close collaboration with Aerospatiale of France to develop a variant suitable for agricultural operations. Cheetah promises to make your green revolution greener and your granaries fuller.

## spraying details

- \* Two sideways strapped up tanks of 600 litres total capacity, a centrifugal pump belt-driven and electrically energised through a clutch and two light alloy booms with tee jets, transforms the basic to an Ag-Cheetah.
- \* Pre-set dosage through adjustable pressure sensing cock, spray starting system via electric cock is pilot controlled by a rocker on the cyclic.
- \* Special instrument panel for the Ag-Cheetah is comfortably placed for the pilot. A manual lever on the collective allows instant dumping of the spray in an emergency.

## and on to the future

HAL designers are active in enlarging the spray tanks of 600 litres to 850 litres over sized tanks. They are also installing solid spray system. Dusting from this will enrich the rolling grass lands.



### dimensions

Overall length (Rotor rotating)	12.92 m	42 ft 4 3/4 in
Overall width (Rotor rotating)	11.02 m	36 ft 1 in
Overall length (Rotor blades folded)	10.24 m	33 ft 6 in
Overall width (Across spray boom)	10.00 m	32 ft 9 1/2 in
Overall height	3.09 m	10 ft 1 1/4 in

### weights

Standard empty weight	1,200 kg	2,646 lb
Normal take off weight	1,950 kg	4,300 lb

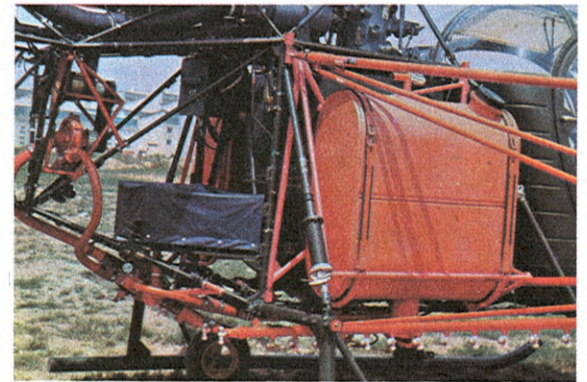
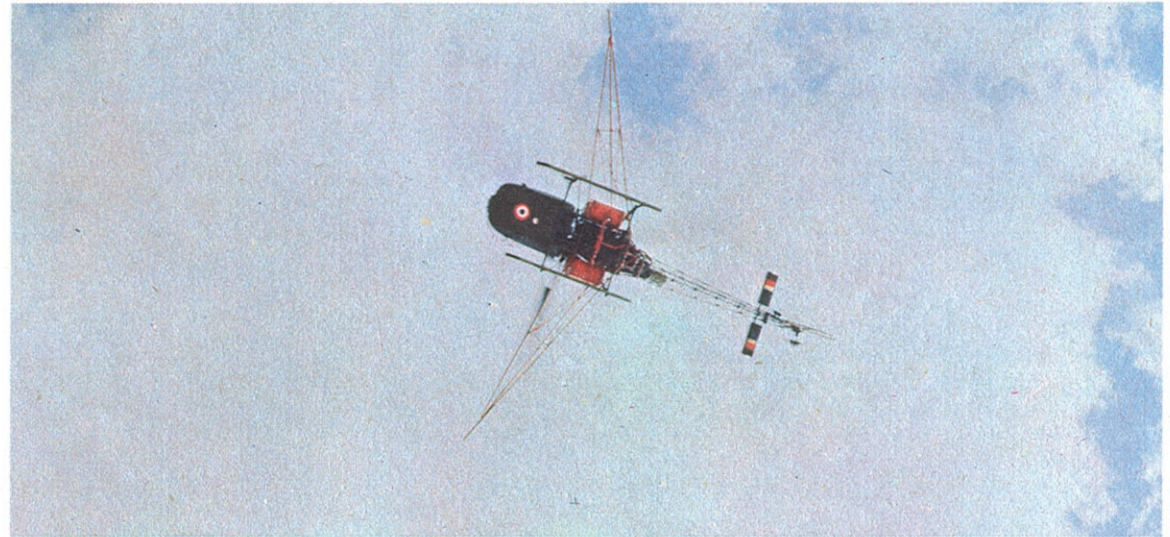


# what more could a farmer ask?

Careful research and designing makes the Ag-Cheetah a very special helicopter, with a number of unbeatable features.

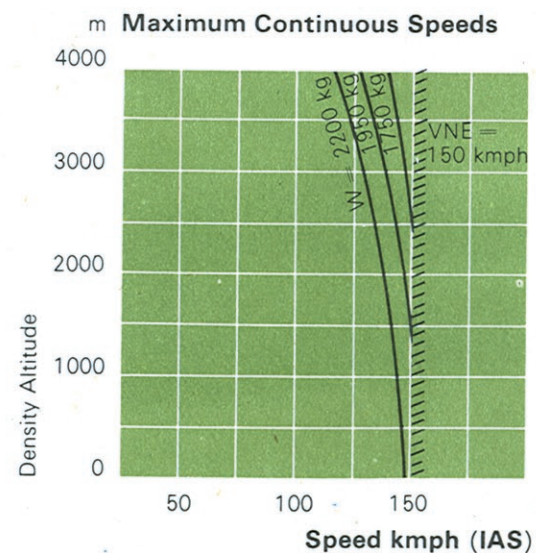
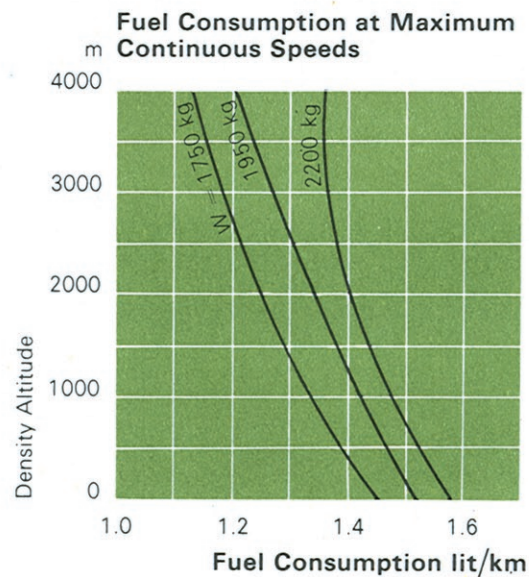
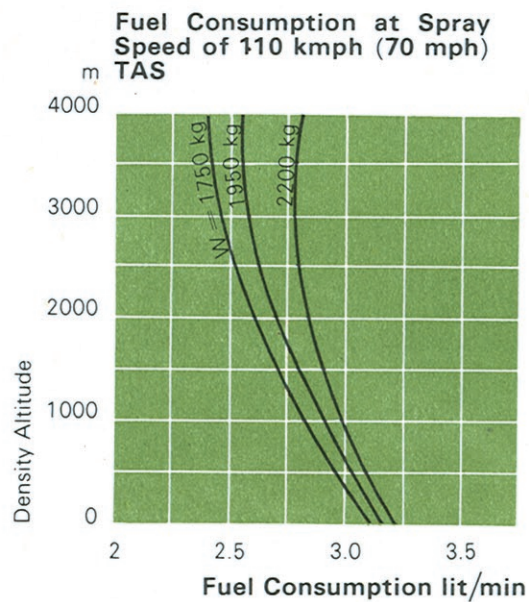
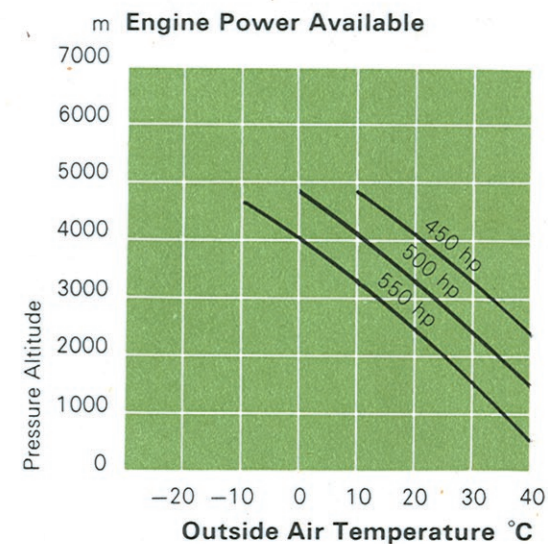
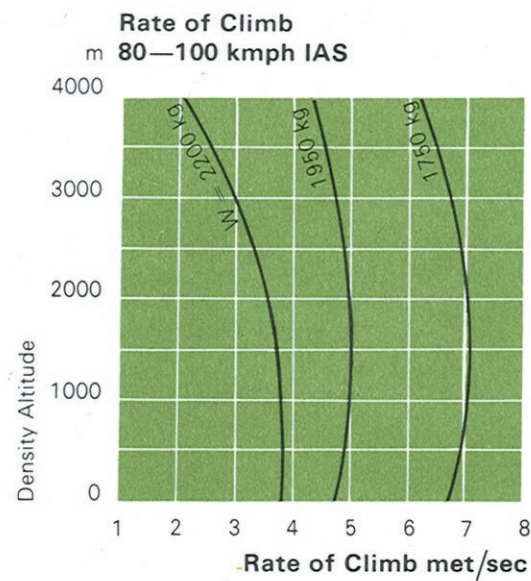
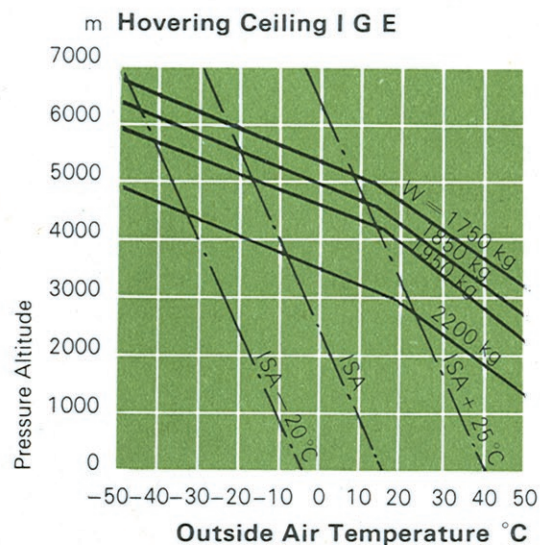
- \* It rises vertically with its full majestic weight of 1950 kg from 3000 metre height in the hot tropics.
- \* Reduce its weight by 150 kg and it will lift off vertically from an altitude of 4000 metres.
- \* Its service ceiling is a lofty 5000 metres.
- \* It can hop from field to field and work for you in remote and inaccessible areas because it carries a large fuel tank and can operate from make-shift landing pads.
- \* Cockpit is pleasant, roomy and comfortable. Controls are handy.
- \* Thoughtfully, the designer has made provision for fitting rear-view mirrors on the skids for the pilot to see the system spraying.

In terms of ease of operation, manoeuvrability, economy, versatility and performance, Ag-Cheetah is what the farmer has been dreaming about. It is real and it is here.





# agricultural version estimated performance





# agricultural version performance

Estimated Performance with Spray Kit (Hot Tropical Conditions)

Performance	Units	Gross Weight (kg) 1950
Maximum speed VNE	km/hr	150
Cruise speed at sea level	km/hr	150
Hover ceiling IGE	metres	4350
Hover ceiling OGE	metres	3900
Maximum range at sea level with full fuel and 10% reserve (at 145 kmph IAS)	km	350
Maximum range at 3000 metres altitude with full fuel and 10% reserve (at 125 kmph IAS)	km	400
Maximum endurance at sea level with full fuel and 10% reserve (IAS 90-100 kmph)	hrs	3 hrs
Maximum endurance at 3000 metres altitude with full fuel and 10% reserve (IAS 90-100 kmph)	hrs	3 hrs 45 min.





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