

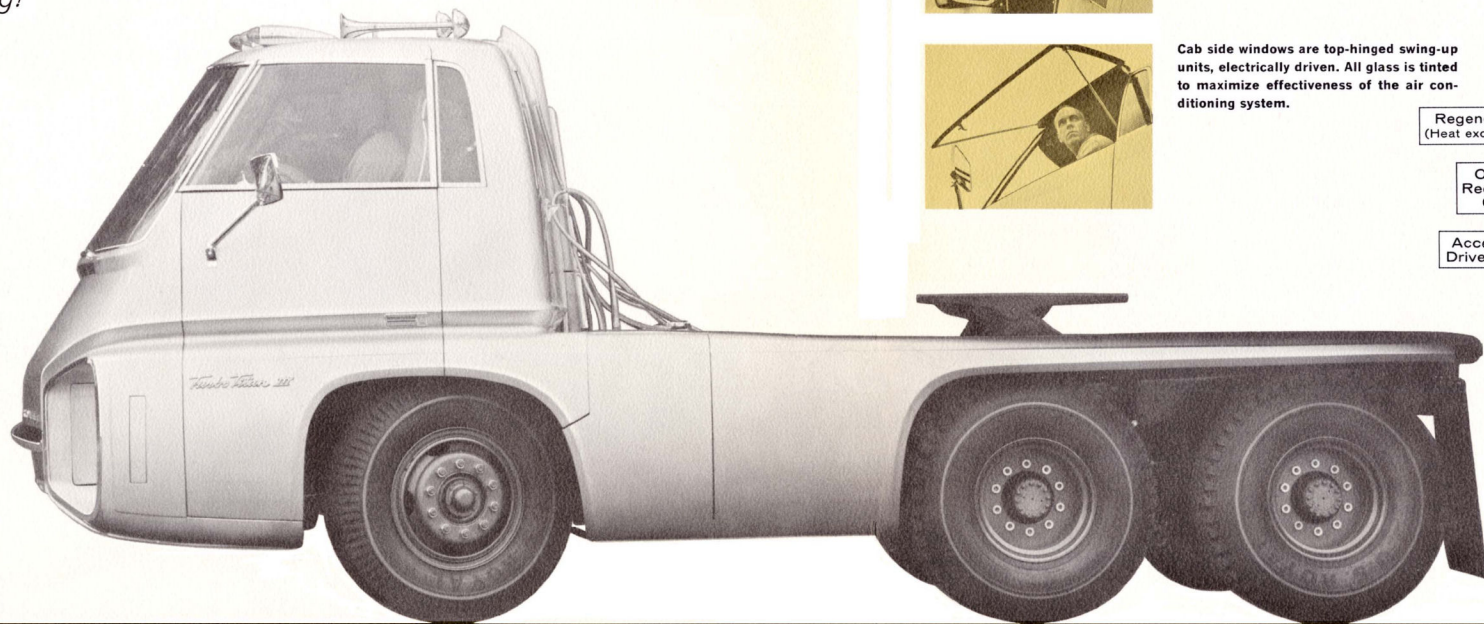
The shape of things to come in highway transportation

TURBO-TITAN III

... a glimpse into tomorrow's trucking!

With over 15 years of development behind it, Chevrolet's dream truck is now on the road, showcasing and testing some of the advanced ideas that may well become standard features on tomorrow's trucks. Most significant of these is gas turbine power, long anticipated throughout the truck field as the next big breakthrough in truck design. Two previous Turbo-Titans have rolled up many thousands of highway miles over the past several years in the guise of conventional tilt cab models and proved conclusively the performance, economy and durability potential of the turbine.

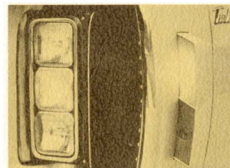
Underlying the exotic contours of the new Turbo-Titan III tractor is the rugged substructure of a current-model Chevrolet tilt cab. The outer panels, and the entire upper structure of the cab, however, have been created expressly for the Turbo-Titan III, and the interior is right out of the space age. All exterior panels are of fiberglass-reinforced polyester, from the massive functional air scoops required by a gas turbine to the skirted "rear deck" capping the rear wheel area. Hinged sections of the skirt behind the cab swing open for access to the batteries, and to the engine when the cab is raised, accomplished by an electro-hydraulic power tilt mechanism.



The interior of the Turbo-Titan III is luxuriously trimmed in leather, vinyl and full pile carpeting, all in metallic blue. Individual "Astronaut" seats feature integral headrest and retractable seat belts, and a central console houses major engine and transmission controls. Extensive instrumentation includes a battery of special instruments to keep tabs on the gas turbine engine. Additional cab features include air conditioning, two-way radio telephone and four-speaker FM stereo radio. Front turn signals pop out when actuated, retract flush with fender when not in use. Rear turn signals are three-bulb units activated in inboard-out sequence, indicating motion in direction of signal.



Most unusual interior feature is the fully adjustable, pedestal-mounted steering console with compact twin dials replacing the conventional steering wheel. Steering is full-power with an auxiliary emergency pump system to provide power assist in the event of engine stall.



Triplex headlight units are housed in the engine air intake scoops, retracting into the sidewalls when not in use. Compact square sealed beam units include new turnpike beams for extra straight-ahead lighting with less side glare to distract oncoming traffic.

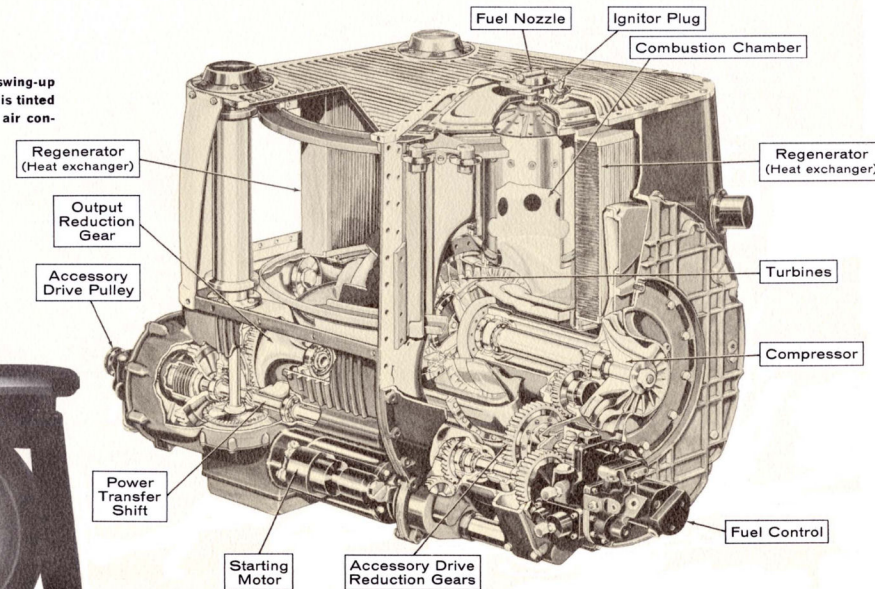


Cab side windows are top-hinged swing-up units, electrically driven. All glass is tinted to maximize effectiveness of the air conditioning system.

THE GT-309 GAS TURBINE ENGINE

At the heart of Chevrolet's unique "Truck of Tomorrow" is the power plant that has come up with the right answer to just about every question ever raised about automotive gas turbines. The GT-309 engine is a product of over 15 years of intensive development. Though in its present state it would be too costly to produce in quantity, with the kind of production know-how on tap at Chevrolet it's just

a matter of time. And its lack of fuel sensitivity—it'll burn just about anything but prefers kerosene or fuel oil—plus its high-torque performance characteristics—peak torque at stall and lots of it—plus its compactness and light weight and the extra durable non-reciprocating parts—make it a promising approach to the truck power plant of the future, and one well worth developing.



TECHNICAL DATA / HOW THE GAS TURBINE WORKS:

Gasifier section—This portion of the turbine engine is primarily a hot air producer, responsible for generating the enormous blast of hot high-velocity gases needed to drive a power turbine. Consisting of compressor, burner and gasifier turbine, it is comparable to an aircraft turbojet engine. When revved to about 15,000 rpm with fuel and ignition on, gasifier operation becomes self-sustaining.

Output section—Adjacent, but not connected, to the gasifier turbine, and taking the full blast of hot air from it, is the power turbine wheel, operating at speeds ranging from stall to about

35,000 rpm. A reduction gear train cuts this to the 4000-rpm output peaking speed, and multiplies the torque accordingly. Peak torque is developed when the power turbine is stalled—875 lbs.-ft. of it to get even heaviest loads moving.

Regenerator—The key to really efficient gas turbine operation is regeneration—the salvaging of heat energy from the exhaust gases and transferring it to the incoming air stream, to minimize the fuel required for heating the incoming air. Also, the regenerator effectively muffles turbine noise, making further

silencing by muffler completely unnecessary.

Power transfer—Under most operating conditions, extra power is available from the gasifier turbine in excess of that required to run the compressor. The GT-309 design incorporates a power transfer system whereby a portion of the gasifier turbine output can be fed into the output gear train to supplement the power turbine. Performance and efficiency are thus improved without size or weight penalties; and with power transfer engaged during deceleration, engine braking is two to three times as effective as that of a piston engine.

SPECIFICATIONS:

Turbo-Titan III tractor

General—Tilt cab dual-drive tandem tractor, 122" wheelbase, 97" CA. Maximum GVW, 48,000 lbs., maximum GCW, 76,800 lbs.

Engine—Regenerative gas turbine. Maximum gross horsepower, 280 at 4000 rpm—torque, 875 lbs.-ft. at stall (0 rpm)—specific fuel consumption, about 0.45 lbs. per horsepower-hour.

Transmission—Six-speed Allison MT-40 automatic planetary gear train, less torque converter and hydraulic retarder (not needed with gas turbine).

Rear axle—Eaton-Hendrickson 34,000-lb. dual-drive bogie with spiral-bevel-gear two-speed axles, ratios 7.17 and 9.77 to 1 (9.77 to 1 not used). Rear spring capacity, 17,000 lbs. each.

Front axle—I-beam of conventional design, 15,000-lb. capacity, with conventional pinned and shackled leaf springs of 7,500-lb. capacity, each.

Frame—Channel-rail ladder-type, with heat-treated channel side rails, 10 $\frac{1}{16}$ " x 3 $\frac{1}{2}$ " x $\frac{3}{16}$ ".

Brakes—Full-air, with Rockwell 17 $\frac{1}{4}$ " x 3 $\frac{1}{2}$ " front shoes, Rockwell Stopmaster[®] 15" x 7" rears.

Wheels and tires—Heavy-duty Budd-type disc wheels with conventional 10.00-20 front tires, super-wide single-dual 18-19.5 16-ply rear tires.

