

# REAL TECH

## MYSTERY CHEVELLE?

By Bill Smith



After 40 years of owning a matching numbers 1966 Super Sport Chevelle with the optional 375 horsepower engine, I often get questions about these cars. One of the frequently asked questions is in regard to the production time frame of the 396 engine with the 375 horsepower option during the 1966 model year. Several 1966 Chevelle owners have told me that when the new 1966 SS Chevelle first came out, the Chevrolet dealer told them the 396 engine with 360 horsepower was the most powerful engine available in the '66 SS Chevelle lineup. Many '66 Chevelle enthusiasts have told me they can find no record of the 375 horsepower 396 engine being available early in the 1966 production year. Other enthusiasts tell me the 375 horsepower engine option was not offered for the '66 SS Chevelle until February of 1966, while others tell me they knew of a 375 horsepower '66 Chevelle in their area early in the '66 production year. The question is – just when did Chevrolet start installing the 396 cubic inch engine with 375 horsepower in the 1966 SS Chevelle?

First, let me give you some general information about the engines in the 1966 Super Sport Chevelle. All 1966 Super Sport Chevelles came with the 396 cubic inch engine. This engine was offered in three factory horsepower ratings; the standard engine with 325 horsepower, the optional 360 horsepower engine known as RPO L34, and the optional 375 horsepower

engine known as RPO L78. Now the question is, when did Chevrolet start producing the '66 SS Chevelle with the L78 engine option during the 1966 production year?

When I started to research my collection of 1966 Chevrolet literature and notes, I found several good reasons why '66 Chevelle enthusiasts would question when the L78 engine option became available, and why dealers would have told a customer the 360 horsepower variant was the highest rated 396 engine available in the '66 SS Chevelle lineup. Chevrolet's own dealer literature, advertising, and marketing strategy have contributed to much of the confusion. At the beginning of the new production year, one of the first informational booklets that Chevrolet dealers receive is the *Review Book*, which informs the dealer of the features available in the upcoming model year. For the '66 SS Chevelle the 1966 *Review Book* only lists the 396 engine available in either the standard 325-horse or optional 360-horse flavor. In the Power Teams section of the first edition 1966 *Chevrolet Dealer Album*, only the standard 325 and optional

360 horsepower engines are listed for the 1966 SS Chevelle. In the first *Chevrolet Service News* for the 1966 model year (dated September 1965), only the standard 325 and optional 360 horsepower engines are listed for the '66 SS Chevelle. The 1966 *Chevrolet Sales Digest* manual, *Ordering Procedure* manual and the *Chevelle Ordering Form* tell the same story- the 325-hp or 360-hp 396 engines are the only engines available for the '66 SS Chevelle. The 1966 *Chevrolet Engineering Features* manual is consistent with the other documents I've mentioned thus far - it only lists 325 and 360 horsepower 396s for the '66 Super Sport. All the early '66 SS Chevelle advertising material I have list only the standard 325 and optional 360 horsepower engines for the '66 SS Chevelle. Finally, the *Chevrolet 1966 Finger Tip Facts* book, which was used by the majority of dealers to assist in the ordering process, lists only 325-horse and 360-horse 396 engines.

Here is another factor to consider. The L78 engine option was first offered in the 1965 SS Chevelle, and approximately 201 such cars were produced with RPO Z16. Very few

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Chevrolet dealers knew about the L78 engine option in '65 SS Chevelles; fewer yet received one of these cars for distribution. Given the scant few 201 '65 Z16 Chevelles in existence, and without any documented mention of the L78 engine option in the early '66 SS Chevelle line up, one can understand why most Chevrolet dealers would be unaware of the availability of the L78 engine option early in the '66 SS Chevelle production.

From my notes and interviews of GM employees, I think I have found some

information that can help us better understand the proliferation of the L78 engine option during the 1966 SS Chevelle model year. A few years ago, I got an email from a man who read about my '66 L78 Chevelle and my '66 Chevelle articles on the Team Chevelle website. He expressed to me how much he enjoyed seeing my original car and gave his opinion about my '66 Chevelle articles on the Team Chevelle page. After several emails I learned he had been a Chevrolet Regional Manager for GM in 1966. One of the many questions I had for him was with regard to the L78 production for '66 SS Chevelles. He gave me a great deal of information, and one fact he recalled to me relates to the absence of the L78 engine option in the early Chevrolet dealer literature and advertising. He told me that in the early days of the '66 production year, Chevrolet's perspective of the L78 engine option was that of an "off road" option. Chevrolet's definition of "off road" meant *not intended for daily use by the general public*; rather, something that catered to a few special interest buyers. Since only a scant few L78 '65 SS Chevelles had been produced, some of which were still languishing unsold in dealers' inventory early into the 1966 production year, there was no real marketing data to build upon. Therefore, the L78 engine option was not listed in any of the early Chevrolet '66 SS Chevelle literature because Chevrolet Marketing did not foresee a significant demand for an RPO L78 Chevelle. He told me that early in the 1966 production year, the muscle car era began to resonate with the baby boomer generation with Dodge, Plymouth, Ford, Pontiac, Buick, Oldsmobile and even AMC competing for market share in the developing muscle car genre. Shortly after the '66 production year began, Chevrolet realized that the L78

engine option could help carve out a bigger slice of this lucrative market for Chevrolet. The new '66 Chevelle body style had already proven itself to be popular with consumers, and Chevrolet Marketing decided to expand its appeal by promoting the L78 engine option in Chevrolet products. Early in the fiscal year of 1966, Chevrolet Marketing released to Chevrolet dealers revised information regarding the availability of the L78 engine option, and Chevrolet began to ship more L78 optioned Chevrolets to more Chevrolet dealerships as part of the dealers' regular inventory.

I have gone through my '66 Chevrolet literature collection looking for revisions regarding the L78 engine option in Chevelles. The earliest mention I find of a L78 engine option revision is dated February 1, 1966, some six months after the 1966 model year start-of-production. The revisions applied to the *1966 Chevrolet Dealer Album*, the *Finger Tip Facts* manual, *Manufacturer's Label Price Guide*, and the *Dealer Order Procedure* manual. The L78 revision for the *1966 Chevrolet Dealer Album* states, "NEW 375-HP TURBO-JET 396 V8. ATTENTION ALL CHEVROLET SALES PERSONNEL. THIS INSERT GIVES DETAILS ON THE ADDITION OF THE 375-HP TURBO-JET 396 V8 ENGINE, NOW AVAILABLE FOR CHEVELLE SS 396 AND EL CAMINO MODELS." The L78 revision for the *1966 Finger Tip Facts* manual states, "1966 FINGER-

## NEW 375-HP TURBO-JET 396 V8

NOW AVAILABLE FOR CHEVELLE SS 396  
AND EL CAMINO MODELS

INSERT THIS PAGE BEHIND THE REVISION TAB IN THE BACK  
OF YOUR 1966 CHEVROLET SALES ALBUM

This new engine can now be specified for Chevelle SS 396 Sport Coupe and Convertible; also for El Camino and Custom El Camino. Teamed with either 3- or 4-Speed transmissions, this brings the total of power teams for SS 396 to eight; for El Camino, to twenty-five. The power team charts below reflect the expanded engine and transmission line-up for these models.

### CHEVELLE SS 396 POWER TEAMS

Engine	3-Speed Fully Synchronized	4-Speed Fully Synchronized	Powerglide
Standard 325-hp Turbo-Jet 396 (296-cu.-in. V8)	Standard	RPO M20	RPO M35
RPO L34 360-hp Turbo-Jet 396 (396-cu.-in. V8)	Standard	RPO M20 & M21	RPO M35
RPO L78 375-hp Turbo-Jet 396 (396-cu.-in. V8)	Standard	RPO M20 & M21	

### EL CAMINO POWER TEAMS

Engine	3-Speed Fully Synchron.	Over-drive	4-Speed Fully Synchron.	Powerglide
Standard 120-hp Hi-Thrift 194 (194-cu.-in. 6)	Standard	RPO M10	RPO M20	RPO M35
Standard 195-hp Turbo-Fire 283 (283-cu.-in. V8)	Standard	RPO M10	RPO M20	RPO M35
RPO L28 140-hp Turbo-Thrift 230 (230-cu.-in. 6)	Standard	RPO M10	RPO M20	RPO M35
RPO L77 220-hp Turbo-Fire 283 (283-cu.-in. V8)	Standard	RPO M10	RPO M20	RPO M35
RPO L30 275-hp Turbo-Fire 327 (327-cu.-in. V8)	Standard	RPO M10	RPO M20	RPO M35
RPO L35 325-hp Turbo-Jet 396 (396-cu.-in. V8)	RPO M13		RPO M20	RPO M35
RPO L34 360-hp Turbo-Jet 396 (396-cu.-in. V8)	RPO M13		RPO M20	RPO M35
RPO L78 375-hp Turbo-Jet 396 (396-cu.-in. V8)	RPO M13		RPO M20	

See 1966 Finger-Tip Facts for complete details.

Addendum to the 1966 Chevrolet Sales Album clearly states the availability of RPO L78 for El Camino and Chevelle SS396.

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TIP FACTS REVISION. THESE COMPLETE SPECIFICATIONS AND DETAILS ARE FOR THE NEW 375-HP TURBO-JET 396 V8 NOW AVAILABLE IN CHEVELLE SS 396 AND EL CAMINO MODELS. THIS SINGLE PAGE ADDITION IS FOR INCLUSION IN YOUR FINGER-TIP FACTS CHEVELLE POWER TEAMS SECTION." I have other revisions regarding the availability of the new L78 engine option in the '66 SS Chevelle and El Camino (dated March 16, 1966) in the *Salesman Digest*, Chevelle order forms, and *Salesman Finger Tip Facts* manual. Additionally, the February 1966 *Chevrolet Service News* gives part numbers for replacement engine parts for the L78 engine, and the June 1966 *Chevrolet Service News* includes the tune-up specifications for the new L78 engine option. These revisions correspond to the information I mentioned earlier from the Chevrolet Regional Manager, and help to explain why some people believe the '66 Chevelle L78 engine option was first offered in February of '66.

I also gathered information from interviews I conducted with employees at the Tonawanda engine plant located in New York state. These employees worked in the plant from 1965 forward. All the 1966 Chevrolet big block engines were manufactured and assembled at the Tonawanda plant. Each interviewed employee told me that the L78 engine option was produced from day one of the 1966 model year,

FYI: Next time you visit the local Chevy dealer, offer to take any 'obsolete' manuals off their hands. You may be surprised at what you find.

This Chevelle Power Teams page is the earliest piece of documentation confirming the availability of RPO L78 for the '66 model year.

Dated February 1, 1966.

CHEVELLE POWER TEAMS						
Engine, Transmission and Rear Axle Combinations						
Option Number	Description	TRANSMISSION	MODELS	REAR AXLE RATIOS		
				Standard	Optional	Special Purpose or Mounting
				General Purpose	ORDER COL-CODE	
Std on Series 131-133-135	120-hp III-Thrift 194 6-Cylinder 194-cu-in displacement Single-barrel carburetor 8.5:1 compression ratio Hydraulic valve lifters	Std 3-Speed Fully Synchro	Sedans, Coupes & Convertibles	3.08:1	32-2	3.36:1
		Std 3-Speed Fully Synchro		3.36:1		
		Powerglide	Sedans, Coupes & Convertibles	3.08:1	3.36:1	
		Powerglide		3.36:1		
L36 on Series 131-133-135	140-hp Turbo-Thrift 230 6-Cylinder 230-cu-in displacement Single-barrel carburetor 8.5:1 compression ratio Hydraulic valve lifters	Std 3-Speed Fully Synchro	Sedans, Coupes & Convertibles	3.08:1	32-2	3.36:1
		Powerglide		3.08:1		
		Overdrive	All Models	3.70:1		
		Std 3-Speed Fully Synchro		3.36:1		
Std on Series 132-134-136	155-hp Turbo-Fire 283 8-Cylinder 283-cu-in displacement 2-barrel carburetor 9.25:1 compression ratio Hydraulic valve lifters	Std 3-Speed Fully Synchro	All Models	3.08:1	32-2	3.36:1
		4-Speed Wide-Range		3.08:1		
		Powerglide	All Models	3.08:1	3.70:1	
		Overdrive		3.70:1		
L77 on Series 132-134-136	220-hp Turbo-Fire 283 8-Cylinder 283-cu-in displacement Regular carburetor 4-barrel carburetor 9.25:1 compression ratio Hydraulic valve lifters Dual exhaust	Std 3-Speed Fully Synchro	All Models	3.08:1	32-2	3.36:1
		4-Speed		3.08:1		
		Powerglide	All Models	3.08:1	3.70:1	
		Overdrive		3.70:1		
L30 on Series 132-134-136	275-hp Turbo-Jet 327 8-Cylinder 327-cu-in displacement Regular carburetor 4-barrel carburetor 10.5:1 compression ratio Hydraulic valve lifters	Powerglide	All Models	3.08:1		
		Std 3-Speed Fully Synchro		3.08:1		
		Std 3-Speed Fully Synchro	All SS 396 Models	3.31:1	32-5	3.55:1
		4-Speed Wide-Range		3.73:1		
Std on Series 138	325-hp Turbo-Jet 396 8-Cylinder 396-cu-in displacement Regular carburetor 4-barrel carburetor 10.25:1 compression ratio Hydraulic valve lifters Dual exhaust	Std 3-Speed Fully Synchro	All SS 396 Models	3.31:1	32-6	3.73:1
		4-Speed Wide-Range		3.31:1		
		Powerglide	All SS 396 Models	3.73:1	32-4	3.31:1
		Std 3-Speed Fully Synchro		3.31:1		
L34 on Series 138	360-hp Turbo-Jet 396 8-Cylinder 396-cu-in displacement Highlift carburetor 4-barrel carburetor 10.25:1 compression ratio Hydraulic valve lifters Dual exhaust	Powerglide	All SS 396 Models	3.73:1	32-5	3.31:1
		Std 3-Speed Fully Synchro		3.31:1		
		Std 3-Speed Fully Synchro	All SS 396 Models	3.73:1	32-4	3.31:1
		4-Speed Wide-Range		3.31:1		
L78 on Series 138	375-hp Turbo-Jet 396 8-Cylinder 396-cu-in displacement Special carburetor 4-barrel carburetor 11.0:1 compression ratio Mechanical valve lifters Dual exhaust Temperature controlled fan	Std 3-Speed Fully Synchro	All SS 396 Models	3.73:1	32-7	3.07:1
		4-Speed Wide-Range		3.31:1		
		Std 3-Speed Fully Synchro	All SS 396 Models	3.73:1	32-5	3.55:1
		4-Speed Close-Ratio		3.55:1		

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and each remembered an increase in L78 engine production during the second half of the 1966 model year. This would explain the few early L78 optioned cars people have recalled in their area early in the '66 production year. I would think that the majority of these early L78 optioned cars were not ordered by dealers themselves, but were produced by Chevrolet for inventory distribution to various stores that had a previous history of selling big block Corvettes or Impalas. I'm sure that certain Chevrolet dealers – those with Chevrolet Central Office contacts, or others who had received one of the earlier '65 L78 SS Chevilles – could have gleaned information of the availability of the L78 engine option in '66 Chevrolet products. They could have ordered some of

these early '66 L78 SS Chevilles by penciling 'L78' in the engine section on the Chevelle Order Form. I'm certain the total number of these early orders for '66 L78 SS Chevilles would have made up a very small percent of the approximately 3099 produced in the '66 model year.

In conclusion, the 375-horsepower L78 engine option was offered by Chevrolet for the '66 Super Sport Chevelle from day one of the '66 model year. At the beginning the 1966 production year, Chevrolet Marketing believed that the L78 engine option would interest only a small, specialized sector of the general car buying public. The L78 was not initially promoted by Chevrolet as an engine option to the Chevrolet dealers or the general

public. Sometime around February 1966, Chevrolet Marketing realized the L78 engine option could be a valuable tool to increase Chevrolet's market share in the expanding performance car market, and began to release more information and advertising regarding the L78 engine option. The greatest percentage of the approximately 3099 L78 '66 SS Chevelles produced were made after February 1966 when Chevrolet Marketing began to increase promotion of the L78 engine option to Chevrolet dealers and the general car buying public.

In 1966, I lived in a little town of 500 people, and worked as-needed washing cars at the local Chevrolet dealership just across the street from my apartment. This Chevy dealer sold three '66 L78 SS Chevelles during the '66 model year. I remember all three Chevelles very well and have owned that third '66 L78 SS Chevelle for over 40 years. Those magnificent high-performance machines made an impression on me that lasts to this day. I remember when that first '66 L78 SS Chevelle arrived at our small town Chevy store. When the driver fired up that solid lifter big block SS Chevelle and backed it off the truck, everyone at the dealership knew this was not your father's Chevrolet. That car was like nothing we had ever heard. It was like Hells Angels had come to Mayberry and Barney and Andy knew things were going to be different from here on out. One of the marketing slogans for GM Marketing in the 1966 model year was, "THRILL OF THE YEAR!" This L78 Chevelle was a thrill to everyone present that day. I wanted to see the USA in one of these Chevrolets!

unique, rare, and powerful machines that were produced during a simpler time and place. If you have any positive comments or questions, my email address is bsmith@kih.net. Happy Motoring!

-Mr. Bill

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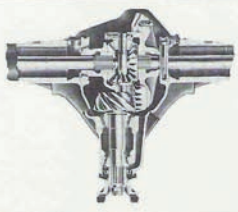
If you specify a mechanical locking or limited-slip rear axle in your new Chevy, it's still called RPO G80.

1966 CHEVELLE POWER TEAMS				ENGINES TRANSMISSIONS AXLE RATIOS
ENGINE	3-SPEED FULLY SYNCH. STANDARD	OVERDRIVE RPO M10	4-SPEED FULLY SYNCH.	POWERGLIDE RPO M35
STANDARD 6 EXCEPT SS 396 MODELS 120-HP HI-THRIFT 194 (194-CU.-IN. SIX)	(2.85:1 LOW) SEDANS, COUPES & CONVERTIBLES: STD.—3.08:1 (a) OPT.—3.36:1 (b)	ALL MODELS: STD.—3.70:1 (a)		SEDANS, COUPES & CONVERTIBLES: STD.—3.08:1 (a)
	(2.85:1 LOW) STATION WAGONS: STD.—3.36:1 (a)			STATION WAGONS: STD.—3.36:1 (a)
RPO L26 EXCEPT SS 396 MODELS 140-HP TURBO-THRIFT 230 (230-CU.-IN. SIX)	(2.85:1 LOW) SEDANS, COUPES & CONVERTIBLES: STD.—3.08:1 (a) OPT.—3.36:1 (b)	SEDANS, COUPES & CONVERTIBLES: STD.—3.70:1 (a)		SEDANS, COUPES & CONVERTIBLES: STD.—3.08:1 (a)
	(2.85:1 LOW) STATION WAGONS: STD.—3.36:1 (a)			STATION WAGONS: STD.—3.36:1 (a)
STANDARD V8 EXCEPT SS 396 MODELS 195-HP TURBO-FIRE 283 (283-CU.-IN. V8)	(2.85:1 LOW) STD.—3.08:1 (a) OPT.—3.36:1 (b)	STD.—3.70:1 (a)	(RPO M20 3.11:1 LOW) STD.—3.08:1 (a) OPT.—3.36:1 (b)	STD.—3.08:1 (a)
RPO L77 EXCEPT SS 396 MODELS 220-HP TURBO-FIRE 283 (283-CU.-IN. V8)	(2.85:1 LOW) STD.—3.08:1 (a) OPT.—3.36:1 (b)	STD.—3.70:1 (a)	(RPO M20 3.11:1 LOW) STD.—3.08:1 (a) OPT.—3.36:1 (b)	STD.—3.08:1 (a)
RPO L30 EXCEPT SS 396 MODELS 275-HP TURBO-FIRE 327 (327-CU.-IN. V8)	(2.54:1 LOW) STD.—3.08:1 (a)		(RPO M20 2.54:1 LOW) STD.—3.08:1 (a)	STD.—3.08:1 (a)
STANDARD SS 396 MODELS ONLY 325-HP TURBO-JET 396 (396-CU.-IN. V8)	(2.41:1 LOW) STD.—3.31:1 (a) OPT.—3.55:1 (b) —3.73:1 (d) —4.10:1 (d)		(RPO M20 2.52:1 LOW) STD.—3.31:1 (a) OPT.—3.55:1 (b) —3.73:1 (d) —4.10:1 (d)	STD.—3.31:1 (a) OPT.—3.55:1 (b) —3.73:1 (d) —4.10:1 (d)
RPO L34 SS 396 MODELS ONLY 360-HP TURBO-JET 396 (396-CU.-IN. V8)	(2.41:1 LOW) STD.—3.73:1 (a) OPT.—3.31:1 (c) —3.55:1 (c) *—4.10:1 (d)		(RPO M20 2.52:1 LOW) STD.—3.73:1 (a) OPT.—3.31:1 (c) —3.55:1 (c) *—4.10:1 (d)  (RPO M21 2.20:1 LOW) STD.—3.73:1 (a) OPT.—3.31:1 (c) —3.55:1 (c) *—4.10:1 (d) *—4.56:1 (d) *—4.88:1 (d)	STD.—3.73:1 (a) OPT.—3.31:1 (c) —3.55:1 (c) *—4.10:1 (d)

Note: Positraction rear axle available in all regular axle ratios. \*Available as Positraction axle only  
 (a) General purpose axle (b) Special purpose or mountain axle (c) Performance cruise axle (d) Performance axle

### REAR AXLE DETAILS

Semi-floating hypoid gear rear axle with 3-piece integrally welded housing. Lubricant capacity—3.5 pints with standard 6-cylinder and V8 engines, plus 220- and 275-hp V8's; 4.0 pints with 396-cu.-in. Turbo-Jet V8's. General Purpose axle ratios offer best balance of performance and economy with each power team. For special requirements, other ratios are available with many power teams . . . see Power Teams chart. Extra-cost Positraction rear axle (RPO G80) available with all regular axle ratios.



I hope the information I have given you helps you understand these unusual,

An earlier printing of the 'Chevelle Power Teams' page dated October 1965 makes no mention of RPO L78.