Saf-T-Liner C2 Conventional (Up to 54 Passengers)

In the summer of 1999, a decision was made to create a new conventional style bus that would redefine the Type C category. A completely new design that would offer better durability, reliability and safety with a driver visibility footprint that no other Type C could match — a design that was truly integrated, not just a body on a flat cowl chassis. With clear objectives in hand, a group of talented stylists, engineers and product planners set out to define the future of school bus transportation by creating an all-new innovative product, in an ultra-modern 275,000 square foot manufacturing facility.

After four years of market research, design, testing and fabrication, the Thomas Saf-T-Liner C2 is a reality. Every body line, every curve, every element of the C2 was designed and engineered to improve durability, reliability, safety and life cycle cost — exactly as it was supposed to do. Drivers, administrators, technicians and parents will all appreciate what the C2 brings to transportation. In fact, school buses will never be the same.

Inside and out, you can see the C2 is a completely new bus. But the design was with purpose. The C2 looks the way it does to make it safer, stronger, more comfortable and more efficient. See a few ways how this was accomplished this below.

- Fewer rivets and screws on the exterior of the bus for improved aesthetics and cleaner bodylines.
- Enhanced body styling for improved aesthetics and a more modern body style.
- Upgraded HVAC air system not only improves the appearance of the driver cabin area, the vents are more adjustable to create a customized and comfortable air flow pattern, particularly for driver.
- The automotive-style dash creates a more attractive driver compartment and aids in visibility, comfort and ergonomics.

Reliability

School buses need to perform every single day. You're counting on it, parents are counting on it and teachers are counting on it. So we looked at how to make the C2 as reliable as possible, from the chassis to the electrical system. Read on to see how the C2 really shines.

- Multiplexed electrical system that allows all of the body and chassis ECUs to communicate, improving overall electrical system performance. (Multiplexing is an electrical system with the ability to send multiple signals down one wire to operate multiple electrical devises.)
- Reduced dust and water intrusion into the engine due to the new positioning of the air intake, the integrated hood plenum and the higher quality filter element. The element has a longer life and maintenance to replace filter is now easier due to improved access.
- Two-box ECU solution for electrical system management, reducing the chance of a complete electrical system failure, which would strand a bus in the field.
- Redesigned hood with 15 lb opening effort.
- Reduced number of relays, fuses, breakers and associated wiring for increased system reliability with fewer parts that can fail. This also improves accessibility to serviceable components and requires fewer parts to stock, reducing service time and repair costs.
- Software module that monitors current draw and behaves like a hardware fuse. The module checks the sensed current against over-current limits ensuring that it stays within the normal operating range. This means fewer fuse failures, which are a high failure item, and an improved ability to diagnose problems.
- Fully connectored-wiring harness with no crimp connections for improved reliability. More consistent designs also improve maintainability.
- Improved body and chassis integration for added flexibility, reliability and quick diagnostics.

Usability

When we developed the Saf-T-Liner C2, the drivers were a very important factor. Many of the features you'll find within it were designed with specifically with the driver in mind. Features to keep drivers happier, more comfortable and more alert — which could be the most important safety feature of all. See some of the features we included in the C2 for drivers here below

- 78" headroom standard on all vehicles, with overall vehicle height comparable to the current 73" headroom profile.
- Larger front door entrance with power operated outward opening door for a roomier feel for passengers and driver in the entryway. Day light opening is increased 12% to 1576 square inches, allowing easier ingress and egress for driver and passengers, plus creates a greater viewing area for loading and unloading.
- Optional integrated dash AC available.
- Improved driver ergonomics with more room for the driver and better instrument panel visibility, as well as increased comfort.
- Flexible mono-track driver compartment accessory mounting system above the driver allows for accessories to be mounted in a position, from left to right, designated by the driver. This means improved ergonomics for the driver with the more position adjustment options for accessories.
- Improved instrument panel visibility for increased driver performance.



- New driver area includes overhead and left-of-driver console storage. Under dash storage is optional.

- True Smart switches on driver control panel which can be easily moved to a position on the control panel that suits either the driver or customer's specifications without any additional rework. (No need to re-set the system, the result is instantaneous).
- Optional adjustable brake and gas pedals for driver comfort.
- Tight 55-degree wheel cut for exceptional maneuverability

Serviceability

In order to stay in top operating condition, buses need to be maintained. That's no secret. But until now, the secret has been how to perform maintenance as quickly and cost-effectively as possible. We developed a few ideas and you can read about them right here.

- Advanced Diagnostic capability through ServiceLink, which can more accurately diagnose the location and cause of a problem (easy under-dash access). Troubleshooting is performed using the vehicle electrical system network interface, improving serviceability and reducing service costs due to faster diagnosis. ServiceLink also uploads reprogramming information quickly.
- Integration of all electronic systems so that the control modules for the engine, transmission, body, bulkhead, chassis and dash cluster share key signal data. Now more information is available about the entire vehicle, making for easier and more accurate diagnosis.
- Matched one-way only wiring connectors with color and number coded wiring.
- Multiplexing offers instantaneous, self-monitoring diagnosis with multiple fault notification.
- Serviceable lower skirt panels for easy repair/replacement.

- Easier safety checking of external lighting through a diagnostic routine that is performed by the driver. This confirms that all FMVSS external lighting is operating, so now it will be possible for one person to test lighting instead of two.
- Easy service access to power steering reservoir, steering gear, steering linkages, fuel filters, fuel water separator, oil dip stick, heater cutoff valves, windshield wiper motor and linkage, radiator surge tank, air cleaner/restriction indicator, oil filter, windshield washer reservoir, air dryer, and crossing arm motor and linkage (optional).
- Frame mounted battery box with heavy-duty bolted steel brackets.
- Technicians can login for assistance at mytbb.thomasbusonline.com or www.accessfreightliner

Safety & Visibilty

What's most different about the C2 would have to be the way it looks. We chose this design, quite simply, because of the outstanding visibility and safety. The windshield provides a panoramic view and when combined with the low sloping hood, low instrument panel and A-pillar windows, the C2's visibility footprint becomes the largest in the type C category. Plus, it offers a number of other features that enhance rider safety. Read about them below.

- The large bonded windshield increases the glass area to more than 2700 square inches and is made from one curved piece instead of two flat front facing pieces and two side wings. The curved, more aerodynamic windshield will shed water and snow more easily. In addition, curved,

bonded glass is more likely to resist chips from rocks and other road debris.

- Passenger windows with mull bar reinforcement of 3" closed cross-section aluminum for reduced chance of ejection of passengers in the event of a rollover.
- Side window defrosting with optional A/C, integrated between the chassis and body for improve defrosting performance, moisture control and driver comfort.
- Mar-proof galvalume upper and lower interior side sheeting has an embossed texture that does not require painting. You'll get improved aesthetics with reduced marking of panels from passenger foot contact. Plus, the panels will require less maintenance, as they will not need repainting in the field.
- Independent daytime running headlamps produce more lumens in a more distributed pattern for improved light distribution. Bulbs are easily replaced from the rear and do not require tools or costly sealed-beam headlight assemblies.
- New larger, more prominent warning light system is increased in illuminated area by over 20%. Flush lights are more integrated into the body creating an aerodynamic styling, improving aesthetics and making them less likely to be damaged by foreign objects. The lights also allow less moisture intrusion through better sealing and bulbs are easily replaced from the interior of the bus.

- Stationery glass in the passenger compartment is bonded and increased 16% in area to 695 square inches.
- Push-out windows are now approximately 3" taller and 1" wider.
- Clear opening of rear emergency door increased 36% to 1295 square inches.

- Improved wiper coverage with intermittent feature and 1537 square inches of wipe area in an overlapping pattern for increased driver visibility in rainy conditions.
- New bonded driver view (RHS) window in front of door for increased visibility in the loading/unloading zone.
- Bumper walk gate extends in front of the bumper. New C2 design also stores the gate on top of the bumper for decreased probability of damage.