



U.S. Department
of Transportation

**Federal Railroad
Administration**

Memorandum

Date: February 3, 2004

Reply to Attn of: OP-04-01

Subject: Instructions for Operation
of FRA Track Geometry Vehicle T-2000

From: Edward W. Pritchard
Director, Office of Safety Assurance and Compliance

To: Regional Administrators

Please ensure that all FRA technical personnel receive a copy of this package at the earliest opportunity. Each region should contact major railroads headquartered within the region to verify distribution of these instructions.

It will be the responsibility of the Regional Operating Practices and Track Specialists to monitor the activities of each OP and Track Inspector and to either personally accompany the vehicle or assign an experienced inspector to do so until it is assured that newer inspectors are qualified to carry out these instructions.

Further, regions shall make every effort to have the Operating Practices and Track Specialists, and District Supervisors ride the T-2000 at least once each year if T-2000 is operating in the region. When riding, the specialists and supervisors will share responsibility for ensuring safe operations with the inspectors.

Attachments:

1. FRA letter to Railroads
2. Enclosure A: Self-Propelled FRA T-2000 Operating Instructions

Dear Railroad Official:

Pursuant to authority granted under *49 U.S.C. 20107 (formerly Section 208 and 208[c])* of the *Federal Railroad Safety Act of 1970*, the Federal Railroad Administration (FRA), Office of Safety is notifying you of our intent to inspect and evaluate your railroad track between (*insert geographic locations*). The inspection will commence on or about (*insert date*) and continue for (*number*) working days. The inspection will be conducted under FRA's ongoing Automated Track Inspection Program (ATIP) high-speed rail vehicle. Instrumentation on the railbound vehicle measures specific track geometry parameters (*49 CFR Part 213 Federal Track Safety Standards*) for the purpose of providing FRA and (*insert railroad abbreviation*) with complying and other beneficial track safety information.

To augment safe movement, the rail vehicle (designated as FRA T2000) will be afforded operational protection as a train, as opposed to roadway maintenance equipment. Where appropriate, specific FRA T2000 operating instructions, outlined in Enclosure A, will supersede your operating rules and special instructions governing movement authority. These additional safety measures communicate the rationale of protecting FRA T2000 movement and promote consistent operating practice compliance nationwide.

When FRA T2000 is self-propelled, FRA requires (*insert railroad abbreviation*) to furnish a pilot. A railroad employee consigned to pilot the FRA T2000 must be a certified and qualified (*49 CFR Part 240*) Locomotive Engineer. FRA and its agents onboard rely solely upon a pilot for complete understanding and compliance with applicable railroad operating rules, timetable authority, and special instructions. All appropriate instructions or orders that govern train movement over the planned survey route must accompany the pilot and maintenance-of-way or engineering personnel that come onboard.

FRA T2000 always inspects to the highest class of track (*49 CFR Section 213.9*) regarding the type of equipment (i.e., passenger or freight) operated, not the highest speed. An on-the-ground track inspection may be conducted en route or after the FRA T2000 has completed the survey. This serves a twofold purpose, first to verify instrument measurement precision and second to determine compliance with the *Federal Track Safety Standards*. Subsequent validation of ATIP geometry exceptions and the corresponding remedial action will be established between the FRA railroad safety inspector and your maintenance-of-way or engineering representative.

Enclosure B requests specific train operation information, contains affected personnel point of contact information, an operations plan detailing the survey date, geographic limits of operation and mileage, topographic map features of the planned ATIP route, physical specifications of the FRA T2000 and other useful data.

Please furnish any information identifying railway clearance restrictions that will prohibit operations over the planned survey route in advance.

FRA also requests you furnish any information identifying all track locations equipped with Automatic Train Stop, Train Control and Cab Signal Systems. FRA T2000 does not have these features and therefore will require towing by an equipped locomotive.

Enclosure C offers a course of action relating to the recovery of railroad cost and services you provide to the operation of the FRA T2000. To facilitate better communications, FRA has developed a web page, accessible at <http://www.fra.dot.gov/safety/Programs//index.htm>, which contains additional ATIP information. FRA welcomes your compliments or concerns.

FRA expects on-duty and travel times to occur between common railroad crew change points. Planned surveys (testing) start at 8:00 each morning and are not to exceed 12-hours in duration. FRA would appreciate timely crew calling and expedient dispatching to meet departure and arrival times, respectively, over the planned survey route. The delineated movement of FRA T200 is vital to uphold regulatory on-duty periods, satisfy other prearranged and time-sensitive schedules, and control operating costs.

FRA will contact you or your designee to arrange specific survey details, crew change points, fueling, etc., and will inform you about the management of collected track geometry data and how it will be used. Please present any additional requirements under which you would receive the FRA T2000, including the availability of motive power to FRA for the purpose of this inspection, should the FRA T2000 require towing. Your cooperation in this undertaking is appreciated.

Signed by Edward W. Pritchard, Director, Office of Safety Assurance and Compliance

Enclosure A

SELF-PROPELLED FRA T2000 OPERATING INSTRUCTIONS

Federal Railroad Administration (FRA), Office of Safety, manages a railbound high-speed inspection vehicle (identified as FRA T2000) to measure track geometry for compliance with the *Federal Track Safety Standards* nationwide.

1. Each Train Dispatcher and Locomotive Engineer/Pilot will be furnished with a copy of this enclosure.
2. Prior to each day's survey, the contractor will conduct a face-to-face safety briefing to all occupants of the FRA T2000 and review applicable operational and safety conditions or on-track protection procedures. Proper equipment is onboard for signaling.
3. FRA inspectors, prior to the survey operation, will communicate directly with the train dispatcher and Locomotive Engineer/Pilot, to insure that all operating rules, in effect on the route to be traveled, are understood and confirm that the FRA T2000 will be dispatched as a train. Reference to applicable operating documents (Timetable, Special Instruction, General Order, Track Bulletin or similar documents) will confirm dispatching and operational information. FRA inspectors will be stationed in the immediate vicinity where the method of operation, procedures, and movement allows monitoring.
4. Whenever the FRA T2000 is operated, the railroad will assign and provide a Locomotive Engineer/Pilot, Traveling Engineer, or Road Foreman. The FRA T2000 Operator solely relies on the Locomotive Engineer/Pilot to identify a sufficient distance in advance, relevant railroad physical characteristics, movement authority limits, and authorized speeds. FRA T2000 is governed by applicable operating rules when moving on either signal or non-signal system territories (except that auto routing and automatic clearing features will not be used and all dual control switches will be blocked). Absolute block protection or alternate protection methods, controls or authority (except within "yard or restricted" limit territory require all trains operate at Restricted Speed), will be applied to protect FRA T2000 against opposing and following trains or on-track equipment.
5. The FRA T2000 operates as a train, and will not be operated by lineup, movement of track cars' or similar on-track equipment authorities. Authorization will not be issued within the same or overlapping limits of another train or on-track equipment, except to facilitate a disabled movement or emergency. Restricted Speed will govern movement within these limits according to the railroad's operating rules.

6. All mandatory directives will be transmitted and received in compliance with railroad rules and instructions. For purposes of this instruction, all references to assigned crewmembers apply only to the Locomotive Engineer/Pilot.
7. Interlocking machines will be operated manually for the FRA T2000 movement (automatic clearing and routing features will not be used). The control machine operator will be kept informed of the progress of the FRA T2000 from one control point to another. Interlocking control operators will not change the position of any switch or indication of any signal, until they are informed that the FRA T2000 is clear of the interlocking or a section thereof. Where provided, electrical or mechanical blocking devices will be used on switch and signal controls to protect against opposing and following movements. If the FRA T2000 is stopped within the limits of any interlocking, the control operator or dispatcher will be notified of the stop and the precise location. The FRA T2000 will not stop within the limits of an automatic interlocking or a non-interlocked, at grade railroad crossing.
8. In automatic block signal system or traffic control system territory, the FRA T2000 should not be stopped on sand or other similar rail surface conditions affecting the shunting of the track circuit. If such a stop cannot be avoided, the FRA T2000 will immediately move a sufficient distance to clear that affected portion of the rail. Track conditions may cause non-shunting. However, in all other conditions FRA T2000 has proven reliable and activates track circuits. Where provided, electrical or mechanical blocking devices will be used on switch and signal controls to protect against opposing and following movements.
9. FRA T2000 will approach all highway-rail grade crossings equipped with automatic warning devices prepared to stop, until it is determined the warning devices activate and the FRA T2000 occupies the crossing. On-ground protection against highway vehicles will be provided when automatic warning devices fail to fully activate, the FRA T2000 interferes with the normal function, or when prescribed by railroad rules or instructions.
10. FRA T2000 must not exceed the maximum passenger speed and are not restricted by special trackwork. In addition, the maximum operating speed of the FRA T2000 is 90 mph when self-propelled, and 110 mph when towed by a locomotive. FRA T2000 are not equipped with automatic cab signal, automatic train stop, or automatic train control systems and cannot negotiate curves greater than 20-degrees. Additionally, due to truck center length, the center of vehicle swing-out clearance is limited on curves greater than 13-degrees, and may restrict safe movement.
11. The FRA T2000 is equipped with operating controls at either end. When appropriate, instructions will be given to the operator to change and operate from the opposite end. Any reverse movement will be conducted, in accordance with the railroad's operating rules. FRA T2000 is not required to be stopped while being passed by a train on an adjacent track.

12. In the event the FRA T2000 Operator is to be relieved for any reason, the Locomotive Engineer/Pilot maybe utilized (if agreeable) to continue operations to the day's final tie-up point. If the Locomotive Engineer/Pilot is not willing or prohibited from operating the FRA T2000, the survey should be stopped at a suitable point short of the scheduled tie-up or a locomotive will be requisitioned for tow-in. This contingency is one that will be addressed at the beginning of the survey to allow for ample planning.
13. Neither FRA nor contractor employees will operate a railroad switch or derail and will rely upon a railroad employee to perform that function. After receiving authority for placement from the appropriate railroad representative, protective devices (i.e., signs, derails, and locking devices, owned by FRA) will be applied by contractor employees. A 'blue signal' will be displayed on or near the FRA T2000, control stand at a readily visible location and the 'key' removed when on ground instrument verification (i-v's) checks are made. Similarly, positive protection (brakes placed in emergency position and surrendering of the locomotive reverser) will be imposed by FRA when a locomotive tows the FRA T2000.
14. Except within a locomotive servicing area or car shop area, FRA may reposition the FRA T2000 at anytime on a track or portion of a track that is exclusively occupied by the FRA T2000 and protected by FRA owned devices. Within a locomotive servicing area or car shop area, a railroad's blue signal rules will be in place and complied with to protect anyone on, under or at the ends of the FRA T2000. The FRA T2000 may be repositioned only after the movement is authorized by the railroad employee-in-charge of workers and approved by the FRA.
15. When unoccupied and at the request of FRA, FRA T2000 protection (guards) will be provided by the railroad. Additionally, the FRA T2000 will not be relocated or coupled to other rolling equipment without permission by the FRA. To prevent undesirable access, a remotely controlled or manually operated switch providing entrance to the track occupied by the FRA T2000, will be aligned against movement to that track. Where provided, electrical or mechanical blocking devices will be used on the switch and signal controls. Additionally, the switch will be secured with an effective locking-device, exclusive to FRA. The switch stand's operating mechanism will be equipped with a visible all-weather display tag warning any users, "**Out of Service Do Not Operate.**" At the request of the railroad, additional protective measures may be utilized.

If a switch cannot be aligned and locked, as described, derails capable of restricting access will be used instead of an effective locking device. The placement¹ of front and rear "portable train control" signs will be displayed in the center of the track, making the presence of the FRA T2000. The warning sign will consist; of a 16x24-inch red (flag) placard affixed to a derail signifying rolling equipment cannot couple or pass. An FRA T2000 wheel will be securely chocked to prohibit movement on its own.

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¹ Protective devices, owned by FRA, will not be placed fewer than 150-feet from each end of the FRA T2000, except where appropriate.