

THE IMPLEMENTATION OF A RISK-BASED VETTING METHODOLOGY TO IDENTIFY CHAMELEON CARRIERS APPLYING FOR OPERATING AUTHORITY

REPORT TO CONGRESS

Pursuant to Senate Report 112-157
Accompanying the Transportation, Housing and Urban Development,
and Related Agencies Appropriations Bill, 2013 (S. 2322)
June 2013

Senate Report 112-157 accompanying the Transportation, Housing and Urban Development, and Related Agencies Appropriations Bill, 2013 (S. 2322), requested the Federal Motor Carrier Safety Administration (FMCSA) to submit a report on the implementation of a risk-based vetting methodology to identify chameleon carriers applying for operating authority, informed by and consistent with the recommendations of Government Accountability Office (GAO) Report 12-364, and other relevant information. This report responds to the Committee's request by describing the rapid prototyping and proof of concept study recently conducted by FMCSA, in collaboration with the Pipeline and Hazardous Materials Safety Administration (PHMSA), to develop and test an automated carrier application screening process consistent with GAO recommendations. This report includes a proposed schedule with performance goals to expand vetting to the freight sector in conjunction with the implementation of the Unified Registration System (URS) now being designed and developed by FMCSA, resources permitting. Further, the Committee requested FMCSA to clarify the application of a uniform Federal standard for enforcement action against chameleon carriers. This report identifies the regulations implemented by FMCSA to achieve a uniform enforcement standard and supportive agency practices.

BACKGROUND

On June 20, 2012, the United States Department of Transportation submitted an official response to GAO Report 12-364, concurring with the recommendations listed in the report and indicating that those recommendations were well aligned with FMCSA's vision and direction in identifying, developing, and using robust risk-based automated screening methodologies to expand its vetting processes beyond passenger carriers and household goods (HHG) carriers within the limitations of agency resources.

Subsequently, FMCSA realigned offices to bring all registration and vetting functions within the Office of Registration and Safety Information, highlighting the importance of the registration function to the agency mission. During this realignment, FMCSA identified funds to develop and test a data-driven, risk-based prototype screening methodology that incorporates matching and motive components for targeting carriers with chameleon attributes, consistent with GAO Report 12-364. The FMCSA established a partnership with PHMSA to leverage PHMSA's Hazmat Intelligence Portal (HIP), a web-based interface that has built-in data warehouse capabilities.

Completion of Rapid Prototyping and Proof of Concept Study for Automated, Data-Driven, Risk-Based Screening of Carriers Applying for Operating Authority Registration

The scope of the risk-based methodology prototyping effort was set to implement the match and motive criteria framework studied and specified in GAO Report 12-364, with intent to design modular expansions to the risk-based criteria in subsequent phases or in follow-on research studies.

The primary objective of the rapid prototyping project was to implement and test the GAO recommended match and motive criteria framework and evaluate whether the model can be used to:

- Reliably identify high-risk carriers among all motor carrier applicants that would need follow-on detailed manual vetting;
- Reliably identify and screen out low-risk carriers that may need minimal manual vetting;
- Expand risk-based screening and subsequent selective vetting to freight carriers;
- Identify follow-on research needs to further tune, validate, and use a robust automated risk-based screening methodology; and
- Expand data sources to include external data sources in addition to FMCSA databases.

The rapid prototyping project implemented and delivered a completed solution in mid-March 2013. This prototype module, named ARCHI (Application Review and Chameleon Investigation), currently resides in PHMSA's HIP environment.

The ARCHI receives data from FMCSA's Licensing and Insurance (L&I) database. Then, matching company information is acquired for each new application. For the rapid prototyping effort, FMCSA used its New Applicant Screening (NAS) tool to identify matches against all existing motor carriers in FMCSA's databases along various data fields such as company name, address, phone number, applicant name, etc. This approach allows for timely implementation of the prototype system by leveraging the capabilities of FMCSA's existing tools. The potential matching companies associated with each application are then inputted into ARCHI, which further links to other FMCSA and PHMSA databases¹ such as the Motor Carrier Management Information System (MCMIS), Enforcement Management Information System (EMIS), Safety and Fitness Electronic Records (SAFER) System, and HIP.

The ARCHI uses these information sources to automatically process and assign a risk level to each application based on the calculated match and motive scores. The ARCHI's calculation of the match and motive scores closely follows the methodology outlined in GAO Report 12-364. Each potential matching company received from NAS is assigned a match score according to the following formula:

¹ Additionally, the PHMSA tool included access to Dun & Bradstreet (D&B) databases. Access to a commercially available research service, like D&B, on an ongoing basis requires requisite funding. The FMCSA expects to assess and quantify incremental benefits of leveraging commercially available data sources for screening and investigative purposes through its planned pilot program.

Match Score² = 1 x (carrier name match x company officer name match) + 2 x (SSN match) + 2 x (EIN match) + 2 x (D&B number match) + 1 x (phone number match) + 0.5 x (address match)

As stated in the GAO Report, companies with a Match Score of 1.5 or greater are identified as potentially having chameleon characteristics. The ARCHI also calculates a motive score for the matching companies that have at least one of the following attributes:

- Did a carrier declare bankruptcy? (*source: EMIS and/or Dun & Bradstreet*)
- Was a carrier involved in a severe (i.e. injury or death) crash? (*source: MCMIS and/or SAFER*)
- Was a carrier fined by FMCSA? (*source: EMIS*)
- Was a carrier issued an out-of-service order? (*source: SAFER*)
- Was a carrier issued an imminent hazard order? (*source: MCMIS*)
- Was a carrier issued an unsatisfactory or an unfit rating by FMCSA? (*source: MCMIS and/or SAFER*)

If data sources indicate that a matching company has at least one of the above indications, that company is treated to have a motive to potentially attempt to reincarnate. The ARCHI combines the match and motive elements and color codes applications that have at least one matching company with a Match Score > 1.5 and a Motive Score ≥ 1.

The ARCHI was uploaded with a large set of recent operating authority applications from Calendar Year 2013 (3,742) and was linked to FMCSA systems to receive weekly updates with new and modified applications. These applications include passenger carriers, HHG carriers, and a large subset of freight carrier applications. Further, application data from known cases of chameleon carriers identified in previous manual vetting processes were also uploaded into the system. A preliminary analysis of the trial data runs indicated that the prototype tool generally is successful in providing a risk-based screening methodology, although refinements are needed and additional data elements should be tested. The functionality of the new tool appears promising, and further analysis will continue beyond the originally scheduled project period as resources become available.

Uniform Federal Enforcement Standards for Chameleon Carriers

The Committee also requested FMCSA to clarify the application of a uniform federal standard for enforcement action against chameleon carriers. While the vetting program and the process to deny operating authority focus on preventing chameleon carriers from entering the industry,

² The Match Score calculation used in the GAO report includes a D&B number matching element, which provides a strong indication of two suspected companies being the same. However, D&B (or DUNS) number is not a required field in the Operation Authority application form, and a new applicant often may not have an assigned D&B number. The GAO study was able to leverage this information because GAO investigated chameleon characteristics among motor carriers that were granted operating authority and had necessary operational histories. The FMCSA's risk-based screening objective is to identify such companies prior to being given such authority.

enforcement standards apply not only to new applicants but also to existing carriers. On April 26, 2012, subsequent to the publication of GAO Report 12-364, FMCSA published a uniform standard for identifying chameleon carriers, codified at title 49 Code of Federal Regulations (CFR) Section 386.73. This standard became effective for enforcement against carriers already active in the industry on May 29, 2012.

In addition to outlining the applicable standard for determining whether a carrier is a reincarnation or affiliate of another regulated entity, the regulation also provides a procedural mechanism for the Agency to consolidate the records of carriers that affiliate or reincarnate for the purpose of avoiding compliance with FMCSA requirements, as well as authority to place out of service motor carriers determined to be reincarnations or close affiliates of companies already subject to an out-of-service order. Prior to codification of this regulatory provision, the Agency was required to evaluate each potential reincarnated or affiliated carrier under State law for the State where the carrier was domiciled. The procedures outlined in this regulation only apply during an enforcement proceeding, after a carrier has obtained operating authority registration and a USDOT number. But the factors enumerated for consideration in determining a relationship between carriers are the same factors considered when an initial application for operating authority registration is reviewed.

Pursuant to title 49 United States Code 13902 and FMCSA's interpretation of this statute at 77 Fed. Reg. 46147 (August 2, 2012), FMCSA may withhold registration, or reject the application for operating authority, of carriers found to be chameleon carriers. Decisions to reject carrier applications for operating authority registration are supported by findings of fact that demonstrate the motor carrier is not fit or willing and able to comply with all statutory and regulatory requirements. Evidence that a carrier is a reincarnation or affiliate of another regulated entity, with a negative safety history, is one factor considered in determining an applicant's overall safety fitness, and willingness and ability to comply. Again, the Agency considers the same factors outlined in section 386.73 of title 49 CFR when making this determination.

PLANNED NEXT STEPS

The FMCSA plans to run a pilot validation study of ARCHI (and possibly similar tools) over a period of time, resources permitting. The Agency envisions that screening algorithms will be further developed, assessed, and validated over the planned pilot study period, and the robust screening algorithms will eventually be implemented within FMCSA's planned URS as a front-end screening methodology and applied to all carrier types seeking operating authority. Budget planning is underway for identifying and pursuing the resources required to conduct further research and to begin implementation of automated screening and expanded vetting in the future. Recently, initial limited funds were identified to begin the initial stage of research. Effective implementation will require significant information technology enhancements and system integration efforts. Likewise, additional legal resources will be needed to review and support operating authority legal determinations and appeals. The FMCSA's overall research and development plan to expand risk-based vetting to for-hire freight carriers is summarized in Table 1, which specifies the target timelines and underlying performance goals.

Table 1: Summary of planned activities, timelines, and performance goals.

Activity	Timeline	Performance Goal
ARCHI Development (Prototyping effort)	December 2012- March 2013	Prototype match and motive criteria that is used by Vetting Specialists
Implement a Pilot Study to use ARCHI as integral part of Vetting Processes	March 2013- January 2014	<p>Test and Validate ARCHI assigned risk for HHG and passenger carriers over a longer period of time</p> <p>Test and Validate ARCHI assigned risk for a sample of freight carriers by vetting high-risk property carriers using vetting specialist (s)</p> <p>Quantify process time improvements in vetting HHG and passenger carriers with the use of ARCHI</p> <p>Quantify resource requirements associated with expanding vetting to include all high-risk freight carriers</p>
Sensitivity analysis research study	July 2013- September 2014	<p>Optimize weight factor and threshold settings for passenger, HHG, and freight carriers separately</p> <p>Quantify and document false-negative and false-positive assessment probabilities at varying levels of settings</p>
Small Business Innovation Research study to explore innovative methods to strengthen screening methods	December 2013- May 2014	<p>Additional actionable data sources or criteria identified.</p> <p>Adaptive and self-learning methods to achieve self-sustaining criteria updates identified</p>
Begin integration of lessons learned and implementation of the data-driven, risk-based screening algorithm in URS (resources permitting)	2015	Once the new methodology is funded and implemented, all applications are automatically screened and assigned a risk factor in URS validated to be effective through prior studies.