

SERFF Tracking Number: AMMA-125885371 State: Arkansas
Filing Company: Amica Mutual Insurance Company State Tracking Number: EFT \$25
Company Tracking Number: AR-H-08-3-IC
TOI: 04.0 Homeowners Sub-TOI: 04.0000 Homeowners Sub-TOI Combinations
Product Name: AR-H-08-3-IC
Project Name/Number: Rule Revision/

Filing at a Glance

Company: Amica Mutual Insurance Company

Product Name: AR-H-08-3-IC

TOI: 04.0 Homeowners

Sub-TOI: 04.0000 Homeowners Sub-TOI
Combinations

Filing Type: Rule

SERFF Tr Num: AMMA-125885371 State: Arkansas

SERFF Status: Closed

Co Tr Num: AR-H-08-3-IC

Co Status: pending

Authors: Brenda Miller, Carol
Pedro, Brenda Walker, Christina
Perfetti

Date Submitted: 11/07/2008

State Tr Num: EFT \$25

State Status: Fees verified and
received

Reviewer(s): Becky Harrington,
Betty Montesi, Brittany Yielding

Disposition Date: 11/24/2008

Disposition Status: Filed

Effective Date Requested (New): 06/01/2009

Effective Date Requested (Renewal): 06/01/2009

Effective Date (New): 06/01/2009

Effective Date (Renewal):
06/01/2009

State Filing Description:

Credit Scoring Model

General Information

Project Name: Rule Revision

Project Number:

Reference Organization:

Reference Title:

Filing Status Changed: 11/24/2008

State Status Changed: 11/07/2008

Corresponding Filing Tracking Number:

Filing Description:

Your records will indicate that Amica's current rating plan uses credit scores as one of the rating variables. The records will further show that Amica uses the Preferred Auto3.0 07 02 credit score model to determine the credit scores.

Status of Filing in Domicile: Not Filed

Domicile Status Comments:

Reference Number:

Advisory Org. Circular:

Deemer Date:

We wish to file an Amica Credit Evaluation Systems (ACES) scoring model developed by Equifax, for our use effective

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June 1, 2009. Please note that we have filed the same model for Automobile in SERFF Number AMMA-125814127 and Personal Umbrella in SERFF Number AMMA-125814134.

Enclosed is information which explains the new model that Amica will use to calculate the credit scores. Please do not hesitate to contact us should you require additional information about this new model.

Company and Contact

Filing Contact Information

Brenda Walker, Sr. Rate Filing Specialist bwalker@amica.com
 P.O. Box 6008 (800) 652-6422 [Phone]
 Providence, RI 02940 (401) 334-6518[FAX]

Filing Company Information

Amica Mutual Insurance Company	CoCode: 19976	State of Domicile: Rhode Island
P.O. Box 6008	Group Code: 28	Company Type:
Providence, RI 02940	Group Name:	State ID Number:
(800) 652-6422 ext. [Phone]	FEIN Number: 05-0348344	

Filing Fees

Fee Required? Yes
 Fee Amount: \$25.00
 Retaliatory? No
 Fee Explanation:
 Per Company: No

COMPANY	AMOUNT	DATE PROCESSED	TRANSACTION #
Amica Mutual Insurance Company	\$25.00	11/07/2008	23781679

SERFF Tracking Number: AMMA-125885371 State: Arkansas
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Correspondence Summary

Dispositions

Status	Created By	Created On	Date Submitted
Filed	Becky Harrington	11/24/2008	11/24/2008

Objection Letters and Response Letters

Objection Letters				Response Letters		
Status	Created By	Created On	Date Submitted	Responded By	Created On	Date Submitted
Pending Industry Response	Becky Harrington	11/07/2008	11/07/2008	Brenda Walker	11/21/2008	11/24/2008

Filing Notes

Subject	Note Type	Created By	Created On	Date Submitted
Manual pages	Note To Filer	Becky Harrington	11/07/2008	11/07/2008

SERFF Tracking Number: AMMA-125885371 *State:* Arkansas
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Disposition

Disposition Date: 11/24/2008

Effective Date (New): 06/01/2009

Effective Date (Renewal): 06/01/2009

Status: Filed

Comment:

Rate data does NOT apply to filing.

SERFF Tracking Number: AMMA-125885371 State: Arkansas
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Item Type	Item Name	Item Status	Public Access
Supporting Document	Form RF-2 Loss Costs Only (not for workers' compensation)		Yes
Supporting Document	H-1 Homeowners Abstract		Yes
Supporting Document	HPCS-Homeowners Premium Comparison Survey		Yes
Supporting Document	NAIC loss cost data entry document		Yes
Supporting Document	Uniform Transmittal Document-Property & Casualty	Filed	Yes
Supporting Document	Confidential	Filed	No
Supporting Document	Explanatory Memorandum	Filed	Yes

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Objection Letter

Objection Letter Status Pending Industry Response

Objection Letter Date 11/07/2008

Submitted Date 11/07/2008

Respond By Date

Dear Brenda Walker,

This will acknowledge receipt of the captioned filing.

Objection 1

- Confidential (Supporting Document)

Comment: Compare the factors to those currently on file. Provide a breakdown showing the number of insureds and the effect of the revised factors.

Objection 2

- Confidential (Supporting Document)

Comment: Identify the neutral tier.

Describe how no hit/thin files will now be treated.

Objection 3

- Confidential (Supporting Document)

Comment: Please refer to Arkansas Code Annotated § 23-67-408 for notification requirements in the event of adverse actions.

Please feel free to contact me if you have questions.

In accordance with Regulation 23, Section 7.A., this filing may not be implemented until 20 days after the requested amendment(s) and/or information is received.

Sincerely,

Becky Harrington

Response Letter

Response Letter Status Submitted to State

Response Letter Date 11/21/2008

SERFF Tracking Number: AMMA-125885371 State: Arkansas
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TOI: 04.0 Homeowners Sub-TOI: 04.0000 Homeowners Sub-TOI Combinations
Product Name: AR-H-08-3-IC
Project Name/Number: Rule Revision/

Dear Becky Harrington,

Comments:

Response 1

Comments: Please be advised that this filing is for the custom insurance scoring model only. We are looking for the model to be approved and accepted for use by the Insurance Department so that it is available for our use when Amica is ready for implementation. When the rate and rule filing is submitted, we will include documentation demonstrating how the old and new rates differ.

There is no rate impact associated with this filing & there are no pages attached to the Rate/Rule Schedule because it is our intention to file these documents when we submit a separate rate impact filing.

No Hit/Thin files will receive a neutral score of 1.000.

Related Objection 1

Applies To:

- Confidential (Supporting Document)

Comment:

Compare the factors to those currently on file. Provide a breakdown showing the number of insureds and the effect of the revised factors.

Related Objection 2

Applies To:

- Confidential (Supporting Document)

Comment:

Identify the neutral tier.

Describe how no hit/thin files will now be treated.

Related Objection 3

Applies To:

- Confidential (Supporting Document)

Comment:

Please refer to Arkansas Code Annotated § 23-67-408 for notification requirements in the event of adverse actions.

SERFF Tracking Number: *AMMA-125885371* *State:* *Arkansas*
Filing Company: *Amica Mutual Insurance Company* *State Tracking Number:* *EFT \$25*
Company Tracking Number: *AR-H-08-3-IC*
TOI: *04.0 Homeowners* *Sub-TOI:* *04.0000 Homeowners Sub-TOI Combinations*
Product Name: *AR-H-08-3-IC*
Project Name/Number: *Rule Revision/*

Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

Sincerely,
Brenda Miller, Brenda Walker, Carol Pedro, Christina Perfetti

SERFF Tracking Number: *AMMA-125885371* *State:* *Arkansas*
Filing Company: *Amica Mutual Insurance Company* *State Tracking Number:* *EFT \$25*
Company Tracking Number: *AR-H-08-3-IC*
TOI: *04.0 Homeowners* *Sub-TOI:* *04.0000 Homeowners Sub-TOI Combinations*
Product Name: *AR-H-08-3-IC*
Project Name/Number: *Rule Revision/*

Note To Filer

Created By:

Becky Harrington on 11/07/2008 01:03 PM

Subject:

Manual pages

Comments:

Please provide the revised manual page showing the new factors.

SERFF Tracking Number: *AMMA-125885371* *State:* *Arkansas*
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TOI: *04.0 Homeowners* *Sub-TOI:* *04.0000 Homeowners Sub-TOI Combinations*
Product Name: *AR-H-08-3-IC*
Project Name/Number: *Rule Revision/*

Rate Information

Rate data does NOT apply to filing.

SERFF Tracking Number: AMMA-125885371 State: Arkansas
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Supporting Document Schedules

Satisfied -Name: Uniform Transmittal Document-
Property & Casualty **Review Status:** Filed 11/24/2008

Comments:

Attachment:

PCtrans.pdf

Satisfied -Name: Explanatory Memorandum **Review Status:** Filed 11/24/2008

Comments:

Attachment:

Amical NCOIL Filing Explanation.pdf

Property & Casualty Transmittal Document

1. Reserved for Insurance Dept. Use Only	2. Insurance Department Use only a. Date the filing is received: b. Analyst: c. Disposition: d. Date of disposition of the filing: e. Effective date of filing: <table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: none;">New Business</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">Renewal Business</td> <td style="border: none;"></td> </tr> </table> f. State Filing #: g. SERFF Filing #: h. Subject Codes	New Business		Renewal Business	
New Business					
Renewal Business					

3. Group Name	Group NAIC #

4. Company Name(s)	Domicile	NAIC #	FEIN #	State #
Amica Mutual Insurance Company	RI	028-19976	05-0348344	

5. Company Tracking Number	AR-H-08-5-IC
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Contact Info of Filer(s) or Corporate Officer(s) [include toll-free number]

6.	Name and address	Title	Telephone #s	FAX #	e-mail
	Brenda M. Walker P.O. Box 6008 Providence, RI 02940-6008	Sr. Rate Filing Specialist	1-800-652-6422 (ext. 24584)	1-401-334-6518	bwalker@amica.com
7.	Signature of authorized filer				
8.	Please print name of authorized filer		Brenda M. Walker		

Filing information (see General Instructions for descriptions of these fields)

9. Type of Insurance (TOI)	Homeowner
10. Sub-Type of Insurance (Sub-TOI)	
11. State Specific Product code(s)(if applicable)[See State Specific Requirements]	
12. Company Program Title (Marketing title)	Homeowner
13. Filing Type	<input type="checkbox"/> Rate/Loss Cost <input type="checkbox"/> Rules <input type="checkbox"/> Rates/Rules <input type="checkbox"/> Forms <input type="checkbox"/> Combination Rates/Rules/Forms <input type="checkbox"/> Withdrawal <input checked="" type="checkbox"/> Other (give description) Amica Credit Model Filing (ACES)
14. Effective Date(s) Requested	New: 06/01/09 Renewal: 06/01/09
15. Reference Filing?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
16. Reference Organization (if applicable)	
17. Reference Organization # & Title	
18. Company's Date of Filing	November 6, 2008
19. Status of filing in domicile	<input checked="" type="checkbox"/> Not Filed <input type="checkbox"/> Pending <input type="checkbox"/> Authorized <input type="checkbox"/> Disapproved

Property & Casualty Transmittal Document—

20.	This filing transmittal is part of Company Tracking #	AR-H-08-5-IC
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21.	Filing Description [This area can be used in lieu of a cover letter or filing memorandum and is free-form text]
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Your records will indicate that Amica's current rating plan uses credit scores as one of the rating variables. The records will further show that Amica uses the Preferred Auto3.0 07 02 credit score model to determine the credit scores.

We wish to file an Amica Credit Evaluation Systems (ACES) scoring model developed by Equifax, for our use effective June 1, 2009. Please note that we have filed the same model for Automobile in SERFF Number AMMA-125885370 and Personal Umbrella in SERFF Number AMMA-125886048.

Enclosed is information which explains the new model that Amica will use to calculate the credit scores. Please do not hesitate to contact us should you require additional information about this new model.

22.	Filing Fees (Filer must provide check # and fee amount if applicable) [If a state requires you to show how you calculated your filing fees, place that calculation below]
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Check #: EFT
Amount: \$25.00

Refer to each state's checklist for additional state specific requirements or instructions on calculating fees.

*****Refer to the each state's checklist for additional state specific requirements (i.e. # of additional copies required, other state specific forms, etc.)**

RATE/RULE FILING SCHEDULE

(This form must be provided ONLY when making a filing that includes rate-related items such as Rate; Rule; Rate & Rule; Reference; Loss Cost; Loss Cost & Rule or Rate, etc.)

(Do not refer to the body of the filing for the component/exhibit listing, unless allowed by state.)

1.	This filing transmittal is part of Company Tracking #	AR-H-08-5-IC
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2.	This filing corresponds to form filing number (Company tracking number of form filing, if applicable)	N/A
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Rate Increase
 Rate Decrease
 Rate Neutral (0%)

3.	Filing Method (Prior Approval, File & Use, Flex Band, etc.)	File and Use
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4a.	Rate Change by Company (As Proposed)
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Company Name	Overall % Indicated Change (when applicable)	Overall % Rate Impact	Written premium change for this program	# of policyholders affected for this program	Written premium for this program	Maximum % Change (where required)	Minimum % Change (where required)

4b.	Rate Change by Company (As Accepted) For State Use Only
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Company Name	Overall % Indicated Change (when applicable)	Overall % Rate Impact	Written premium change for this program	# of policyholders affected for this program	Written premium for this program	Maximum % Change	Minimum % Change

5. Overall Rate Information (Complete for Multiple Company Filings only)

		COMPANY USE	STATE USE
5a	Overall percentage rate indication (when applicable)		
5b	Overall percentage rate impact for this filing		
5c	Effect of Rate Filing – Written premium change for this program		
5d	Effect of Rate Filing – Number of policyholders affected		

6.	Overall percentage of last rate revision	7.7%
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7.	Effective Date of last rate revision	05/01/08
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8.	Filing Method of Last filing (Prior Approval, File & Use, Flex Band, etc.)	File and Use
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9.	Rule # or Page # Submitted for Review	Replacement or withdrawn?	Previous state filing number, if required by state
01		<input type="checkbox"/> New <input type="checkbox"/> Replacement <input type="checkbox"/> Withdrawn	
02		<input type="checkbox"/> New <input type="checkbox"/> Replacement <input type="checkbox"/> Withdrawn	
03		<input type="checkbox"/> New <input type="checkbox"/> Replacement <input type="checkbox"/> Withdrawn	

**Arkansas
Amica Mutual Insurance Company
Homeowners**

Explanatory Memorandum

Your records will indicate that Amica currently uses credit information in rating. Effective June 1, 2009, we will replace the credit score model that is currently on file with an Amica specific model, Amica Credit Evaluation Systems (ACES). We are filing this model now so that it is available for our use when Amica is ready for implementation.

Model Goals:

We currently use Equifax Preferred Auto 3.0 in rating Homeowners. While this generic model segments our business fairly well, we have little control over the reason codes that we send to our customers. Further, a model built on Amica-specific data should lead to increased segmentation.

Model Algorithm

We apply Poisson distribution to develop the risk model. The expression of the distribution is

$$f(y) = \frac{u^y e^{-u}}{y!}, y \geq 0$$

$$\text{var}(y) = u$$

The parameters were estimated by using Ridge-Stabilized Newton-Raphson algorithm to maximum the log-likelihood function with respect to the regression parameters $(\beta_0, \beta_1, \dots, \beta_k)$ provided that there are k attributes are included in the model. Then predicted expected risk of the record i can be computed by

$$E(y_i) = e^{(\beta_0 + \beta_1 \times x_{i1} + \dots + \beta_k \times x_{ik})}$$

The predicted risk is then rescaled according to the attached calibration code

Model Data

The model was built by Equifax, with Amica-specific policy data. The (ACES) model was developed using policy data with effective dates between March 2003 and February 2006 evaluated as of May 31, 2007. Data was provided separately for auto and homeowners. All states were included in the data except Massachusetts and Vermont. Losses were capped at \$50,000 per claim on auto and \$50,000 per occurrence for Homeowners.

We used 70% of the data to build each model, and saved 30% of the data for validation. This data split was done randomly.

Methodology

Frequency, using the Poisson distribution, and Severity, using the Gamma distribution, were modeled separately. A pure premium model was then derived by multiplying the frequency by severity.

Auto models were initially built on auto data and Homeowners models were initially built on homeowner's data. These models were then cross validated (auto on the home dataset and homeowners on the auto dataset) to determine if one model could be used on both lines of business.

We also tested the significance of attributes and transformed some attributes by investigating the following criteria: a) predictability, (b) correlation, (c) interpretability, (d) regulatory compliance and (e) consistent performance between difference policy years.

Model Results

We found that the Homeowners frequency model performed well on both the auto and homeowners lines of business.

While including a severity component did lead to slightly more loss cost segmentation, without the ability to control for the severity drivers (coverage amount, deductible, etc.), we felt that adding this component would be problematic.

Furthermore, a few of the components in the severity model were counterintuitive.

While using two different models (one for auto, another for homeowners) would also increase segmentation, we feel that this would cause some implementation issues. For example, with two separate models for auto and homeowners, we would be using different characteristics with different reason codes for auto and homeowners, which would potentially lead to conflicting messages.

Finally, the Homeowners model had fewer attributes and the included attributes are easy to understand and explain. As a result, we are proposing to implement this model built on Amica Homeowners data for Homeowners.

Exhibit 1 displays univariate results for each characteristic used in the model.

Exhibit 2 displays the final model before scaling, including descriptions and attribute minimums and maximums where applicable.

Exhibit 3 displays the scaling code used to convert the model from a predicted frequency to a numerical value. The scaled score has a range of 700 to 993.

Exhibit 4 is a sample scoring calculation of a theoretical risk.

Exhibit 5 contains loss and exposure data, and the methodology used in selecting the factors. (For auto, we mapped the current score to the modeled score and kept the same credit weights. The loss data based on the new model is excluded.)

We believe that this (ACES) model is an improvement over the current model, since it segments our book of business based on Amica-specific loss experience. Furthermore, we will now have the ability to be more specific and forthcoming as to how a policyholder may improve his or her score. Finally, with the concurrent changes in our rating procedures, we will now be able to significantly mitigate the year to year fluctuations in premium due to credit.