

Regulation of the
Department of Insurance

Concerning
**NAIC Model Regulations for Recognizing
New Annuity Mortality Tables for Use in
Determining Reserve Liabilities for Annuities**

Regulations adopted after July 1, 2013, become effective upon posting to the website of the Secretary of the State, or at a later date specified within the regulation.

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October 15, 2013

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State of Connecticut
REGULATION
of

NAME OF AGENCY
Insurance Department

Concerning

SUBJECT MATTER OF REGULATION
**NAIC Model Regulation for Recognizing New Annuity Mortality
Tables For Use In Determining Reserve Liabilities for Annuities**

Section 1

Sections 38a-78-21 to 38a-78-23, inclusive, of the Regulations of Connecticut State Agencies are amended to read as follows:

**NAIC Model Regulation for Recognizing New Annuity Mortality
Tables For Use In Determining Reserve Liabilities for Annuities**

Sec. 38a-78-21. Purpose

The purpose of Sections 38a-78-22 to 38a-78-24, inclusive, of the Regulations of Connecticut State Agencies is to recognize the following mortality tables for use in determining the minimum standard of valuation for annuity and pure endowment contracts: the 1983 Table "a"; the 1983 Group Annuity Mortality (1983 GAM) Table; the Annuity 2000 Mortality Table; the 2012 Individual Annuity Reserving (2012 IAR) Table, and the 1994 Group Annuity Reserving (1994 GAR) Table.

Sec. 38a-78-22. Definitions

As used in Sections 38a-78-23 and 38a-78-24 of the Regulations of Connecticut State Agencies:

(a) "1983 Table 'a'" means that mortality table developed by the Society of Actuaries Committee to Recommend a New Mortality Basis for Individual Annuity Valuation and adopted as a recognized mortality table for annuities in June 1982 by the National Association of Insurance Commissioners.

(b) "1983 GAM Table" means that mortality table developed by the Society of Actuaries Committee on Annuities and adopted as a recognized mortality table for annuities in December 1983 by the National Association of Insurance Commissioners.

(c) "1994 GAR Table" means that mortality table developed by the Society of Actuaries Group Annuity Valuation Table Task Force and adopted as a recognized mortality table for annuities in December 1996 by the National Association of Insurance Commissioners.

(d) "Annuity 2000 Mortality Table" means that mortality table developed by the Society of Actuaries Committee on Life Insurance Research and adopted as a recognized mortality table for annuities in December 1996 by the National Association of Insurance Commissioners.

(e) "2012 IAR Table" means that generational mortality table developed by the Society of Actuaries Committee on Life Insurance Research and containing rates, qx_{2012-n} , derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in section 38a-78-23a of the Regulations of Connecticut State Agencies.

(f) "2012 Individual Annuity Mortality Period Life (2012 IAM Period) Table" means the Period

$$q_x^{2012+n} = q_x^{2012} (1 - G2x)^n$$

The resulting q_x^{2012+n} shall be rounded to three decimal places per 1,000, e.g., 0.741 deaths per 1,000. The rounding shall occur according to the formula above, starting at the 2012 period table rate.

For example, for a male age 30, $q_x^{2012} = 0.741$.

$$q_x^{2013} = 0.741 * (1 - 0.010)^1 = 0.73359, \text{ which is rounded to } 0.734.$$

$$q_x^{2014} = 0.741 * (1 - 0.010)^2 = 0.7262541, \text{ which is rounded to } 0.726.$$

A method leading to incorrect rounding would be to calculate q_x^{2014} as $q_x^{2013} * (1 - 0.010)$, or $0.734 * 0.99 = 0.727$.

It is incorrect to use the already rounded q_x^{2013} to calculate q_x^{2014} .

Sec. 3:

The Regulations of Connecticut State Agencies are amended by adding Appendices 1 to 4, inclusive, to Sections 38a-78-1 to 38a-78-44, inclusive as follows:

APPENDIX 2
2012 IAM Period Table
Male, Age Nearest Birthday

<u>AGE</u>	<u>1000 · qx</u> ²⁰¹²	<u>AGE</u>	<u>1000 · qx</u> ²⁰¹²	<u>AGE</u>	<u>1000 · qx</u> ²⁰¹²	<u>AGE</u>	<u>1000 · qx</u> ²⁰¹²
<u>0</u>	<u>1.605</u>	<u>30</u>	<u>0.741</u>	<u>60</u>	<u>5.096</u>	<u>90</u>	<u>109.993</u>
<u>1</u>	<u>0.401</u>	<u>31</u>	<u>0.751</u>	<u>61</u>	<u>5.614</u>	<u>91</u>	<u>123.119</u>
<u>2</u>	<u>0.275</u>	<u>32</u>	<u>0.754</u>	<u>62</u>	<u>6.169</u>	<u>92</u>	<u>137.168</u>
<u>3</u>	<u>0.229</u>	<u>33</u>	<u>0.756</u>	<u>63</u>	<u>6.759</u>	<u>93</u>	<u>152.171</u>
<u>4</u>	<u>0.174</u>	<u>34</u>	<u>0.756</u>	<u>64</u>	<u>7.398</u>	<u>94</u>	<u>168.194</u>
<u>5</u>	<u>0.168</u>	<u>35</u>	<u>0.756</u>	<u>65</u>	<u>8.106</u>	<u>95</u>	<u>185.260</u>
<u>6</u>	<u>0.165</u>	<u>36</u>	<u>0.756</u>	<u>66</u>	<u>8.548</u>	<u>96</u>	<u>197.322</u>
<u>7</u>	<u>0.159</u>	<u>37</u>	<u>0.756</u>	<u>67</u>	<u>9.076</u>	<u>97</u>	<u>214.751</u>
<u>8</u>	<u>0.143</u>	<u>38</u>	<u>0.756</u>	<u>68</u>	<u>9.708</u>	<u>98</u>	<u>232.507</u>
<u>9</u>	<u>0.129</u>	<u>39</u>	<u>0.800</u>	<u>69</u>	<u>10.463</u>	<u>99</u>	<u>250.397</u>
<u>10</u>	<u>0.113</u>	<u>40</u>	<u>0.859</u>	<u>70</u>	<u>11.357</u>	<u>100</u>	<u>268.607</u>
<u>11</u>	<u>0.111</u>	<u>41</u>	<u>0.926</u>	<u>71</u>	<u>12.418</u>	<u>101</u>	<u>290.016</u>
<u>12</u>	<u>0.132</u>	<u>42</u>	<u>0.999</u>	<u>72</u>	<u>13.675</u>	<u>102</u>	<u>311.849</u>
<u>13</u>	<u>0.169</u>	<u>43</u>	<u>1.069</u>	<u>73</u>	<u>15.150</u>	<u>103</u>	<u>333.962</u>
<u>14</u>	<u>0.213</u>	<u>44</u>	<u>1.142</u>	<u>74</u>	<u>16.860</u>	<u>104</u>	<u>356.207</u>
<u>15</u>	<u>0.254</u>	<u>45</u>	<u>1.219</u>	<u>75</u>	<u>18.815</u>	<u>105</u>	<u>380.000</u>
<u>16</u>	<u>0.293</u>	<u>46</u>	<u>1.318</u>	<u>76</u>	<u>21.031</u>	<u>106</u>	<u>400.000</u>
<u>17</u>	<u>0.328</u>	<u>47</u>	<u>1.454</u>	<u>77</u>	<u>23.540</u>	<u>107</u>	<u>400.000</u>
<u>18</u>	<u>0.359</u>	<u>48</u>	<u>1.627</u>	<u>78</u>	<u>26.375</u>	<u>108</u>	<u>400.000</u>
<u>19</u>	<u>0.387</u>	<u>49</u>	<u>1.829</u>	<u>79</u>	<u>29.572</u>	<u>109</u>	<u>400.000</u>
<u>20</u>	<u>0.414</u>	<u>50</u>	<u>2.057</u>	<u>80</u>	<u>33.234</u>	<u>110</u>	<u>400.000</u>
<u>21</u>	<u>0.443</u>	<u>51</u>	<u>2.302</u>	<u>81</u>	<u>37.533</u>	<u>111</u>	<u>400.000</u>
<u>22</u>	<u>0.473</u>	<u>52</u>	<u>2.545</u>	<u>82</u>	<u>42.261</u>	<u>112</u>	<u>400.000</u>
<u>23</u>	<u>0.513</u>	<u>53</u>	<u>2.779</u>	<u>83</u>	<u>47.441</u>	<u>113</u>	<u>400.000</u>
<u>24</u>	<u>0.554</u>	<u>54</u>	<u>3.011</u>	<u>84</u>	<u>53.233</u>	<u>114</u>	<u>400.000</u>
<u>25</u>	<u>0.602</u>	<u>55</u>	<u>3.254</u>	<u>85</u>	<u>59.855</u>	<u>115</u>	<u>400.000</u>
<u>26</u>	<u>0.655</u>	<u>56</u>	<u>3.529</u>	<u>86</u>	<u>67.514</u>	<u>116</u>	<u>400.000</u>
<u>27</u>	<u>0.688</u>	<u>57</u>	<u>3.845</u>	<u>87</u>	<u>76.340</u>	<u>117</u>	<u>400.000</u>
<u>28</u>	<u>0.710</u>	<u>58</u>	<u>4.213</u>	<u>88</u>	<u>86.388</u>	<u>118</u>	<u>400.000</u>
<u>29</u>	<u>0.727</u>	<u>59</u>	<u>4.631</u>	<u>89</u>	<u>97.634</u>	<u>119</u>	<u>400.000</u>
						<u>120</u>	<u>1000.000</u>

APPENDIX 4
Projection Scale G2
Male, Age Nearest Birthday

<u>AGE</u>	<u>G2x</u>	<u>AGE</u>	<u>G2x</u>	<u>AGE</u>	<u>G2x</u>	<u>AGE</u>	<u>G2x</u>
<u>0</u>	<u>0.010</u>	<u>30</u>	<u>0.010</u>	<u>60</u>	<u>0.015</u>	<u>90</u>	<u>0.007</u>
<u>1</u>	<u>0.010</u>	<u>31</u>	<u>0.010</u>	<u>61</u>	<u>0.015</u>	<u>91</u>	<u>0.007</u>
<u>2</u>	<u>0.010</u>	<u>32</u>	<u>0.010</u>	<u>62</u>	<u>0.015</u>	<u>92</u>	<u>0.006</u>
<u>3</u>	<u>0.010</u>	<u>33</u>	<u>0.010</u>	<u>63</u>	<u>0.015</u>	<u>93</u>	<u>0.005</u>
<u>4</u>	<u>0.010</u>	<u>34</u>	<u>0.010</u>	<u>64</u>	<u>0.015</u>	<u>94</u>	<u>0.005</u>
<u>5</u>	<u>0.010</u>	<u>35</u>	<u>0.010</u>	<u>65</u>	<u>0.015</u>	<u>95</u>	<u>0.004</u>
<u>6</u>	<u>0.010</u>	<u>36</u>	<u>0.010</u>	<u>66</u>	<u>0.015</u>	<u>96</u>	<u>0.004</u>
<u>7</u>	<u>0.010</u>	<u>37</u>	<u>0.010</u>	<u>67</u>	<u>0.015</u>	<u>97</u>	<u>0.003</u>
<u>8</u>	<u>0.010</u>	<u>38</u>	<u>0.010</u>	<u>68</u>	<u>0.015</u>	<u>98</u>	<u>0.003</u>
<u>9</u>	<u>0.010</u>	<u>39</u>	<u>0.010</u>	<u>69</u>	<u>0.015</u>	<u>99</u>	<u>0.002</u>
<u>10</u>	<u>0.010</u>	<u>40</u>	<u>0.010</u>	<u>70</u>	<u>0.015</u>	<u>100</u>	<u>0.002</u>
<u>11</u>	<u>0.010</u>	<u>41</u>	<u>0.010</u>	<u>71</u>	<u>0.015</u>	<u>101</u>	<u>0.002</u>
<u>12</u>	<u>0.010</u>	<u>42</u>	<u>0.010</u>	<u>72</u>	<u>0.015</u>	<u>102</u>	<u>0.001</u>
<u>13</u>	<u>0.010</u>	<u>43</u>	<u>0.010</u>	<u>73</u>	<u>0.015</u>	<u>103</u>	<u>0.001</u>
<u>14</u>	<u>0.010</u>	<u>44</u>	<u>0.010</u>	<u>74</u>	<u>0.015</u>	<u>104</u>	<u>0.000</u>
<u>15</u>	<u>0.010</u>	<u>45</u>	<u>0.010</u>	<u>75</u>	<u>0.015</u>	<u>105</u>	<u>0.000</u>
<u>16</u>	<u>0.010</u>	<u>46</u>	<u>0.010</u>	<u>76</u>	<u>0.015</u>	<u>106</u>	<u>0.000</u>
<u>17</u>	<u>0.010</u>	<u>47</u>	<u>0.010</u>	<u>77</u>	<u>0.015</u>	<u>107</u>	<u>0.000</u>
<u>18</u>	<u>0.010</u>	<u>48</u>	<u>0.010</u>	<u>78</u>	<u>0.015</u>	<u>108</u>	<u>0.000</u>
<u>19</u>	<u>0.010</u>	<u>49</u>	<u>0.010</u>	<u>79</u>	<u>0.015</u>	<u>109</u>	<u>0.000</u>
<u>20</u>	<u>0.010</u>	<u>50</u>	<u>0.010</u>	<u>80</u>	<u>0.015</u>	<u>110</u>	<u>0.000</u>
<u>21</u>	<u>0.010</u>	<u>51</u>	<u>0.011</u>	<u>81</u>	<u>0.014</u>	<u>111</u>	<u>0.000</u>
<u>22</u>	<u>0.010</u>	<u>52</u>	<u>0.011</u>	<u>82</u>	<u>0.013</u>	<u>112</u>	<u>0.000</u>
<u>23</u>	<u>0.010</u>	<u>53</u>	<u>0.012</u>	<u>83</u>	<u>0.013</u>	<u>113</u>	<u>0.000</u>
<u>24</u>	<u>0.010</u>	<u>54</u>	<u>0.012</u>	<u>84</u>	<u>0.012</u>	<u>114</u>	<u>0.000</u>
<u>25</u>	<u>0.010</u>	<u>55</u>	<u>0.013</u>	<u>85</u>	<u>0.011</u>	<u>115</u>	<u>0.000</u>
<u>26</u>	<u>0.010</u>	<u>56</u>	<u>0.013</u>	<u>86</u>	<u>0.010</u>	<u>116</u>	<u>0.000</u>
<u>27</u>	<u>0.010</u>	<u>57</u>	<u>0.014</u>	<u>87</u>	<u>0.009</u>	<u>117</u>	<u>0.000</u>
<u>28</u>	<u>0.010</u>	<u>58</u>	<u>0.014</u>	<u>88</u>	<u>0.009</u>	<u>118</u>	<u>0.000</u>
<u>29</u>	<u>0.010</u>	<u>59</u>	<u>0.015</u>	<u>89</u>	<u>0.008</u>	<u>119</u>	<u>0.000</u>
						<u>120</u>	<u>0.000</u>

R-39 Rev. 03/2012
(Certification page—see Instructions on back)

CERTIFICATION

This certification statement must be completed in full, including items 3 and 4, if they are applicable.

- 1) I hereby certify that the above (check one) Regulations Emergency Regulations
 2) are (check all that apply) adopted amended repealed by this agency pursuant to the following authority(ies): (complete all that apply)

a. Connecticut General Statutes section(s) 38a-78.

b. Public Act Number(s) _____.
 (Provide public act number(s) if the act has not yet been codified in the Connecticut General Statutes.)

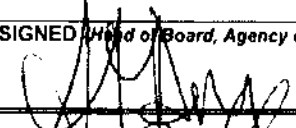
- 3) And I further certify that notice of intent to adopt, amend or repeal said regulations was published in the Connecticut Law Journal on September 5, 2013 notice was sent to SOTS website for public comment period;
 (Insert date of notice publication if publication was required by CGS Section 4-168.)

- 4) And that a public hearing regarding the proposed regulations was held on _____;
 (Insert date(s) of public hearing(s) held pursuant to CGS Section 4-168(a)(7), if any, or pursuant to other applicable statute.)

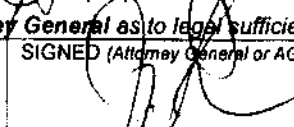
- 5) And that said regulations are EFFECTIVE (check one, and complete as applicable)

When filed with the Secretary of the State

OR on (insert date) _____

DATE <u>10/7/13</u>	SIGNED (Head of Board, Agency or Commission) 	OFFICIAL TITLE, DULY AUTHORIZED <u>Deputy Commissioner</u>
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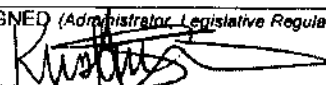
APPROVED by the Attorney General as to legal sufficiency in accordance with CGS Section 4-169, as amended

DATE <u>10/15/13</u>	SIGNED (Attorney General or AG's designated representative) 	OFFICIAL TITLE, DULY AUTHORIZED <u>ASSOC. ATTY. GENERAL</u>
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Proposed regulations are **DEEMED APPROVED** by the Attorney General in accordance with CGS Section 4-169, as amended, if the attorney General fails to give notice to the agency of any legal insufficiency within thirty (30) days of the receipt of the proposed regulation.

(For Regulation Review Committee Use ONLY)

- Approved Rejected without prejudice
 Approved with technical corrections and deletions Disapproved in part, (Indicate Section Numbers disapproved only)
 Deemed approved pursuant to CGS Section 4-170(c)

By the Legislative Regulation Review Committee in accordance with CGS Section 4-170, as amended	DATE <u>January 7, 2014</u>	SIGNED (Administrator, Legislative Regulation Review Committee) 
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Two certified copies received and filed and one such copy forwarded to the Commission on Official Legal Publications in accordance with CGS Section 4-172, as amended.

DATE	SIGNED (Secretary of the State)	BY
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(For Secretary of the State Use ONLY)