

THE PERMIAN LAYER: DELVING FOR HISTORY IN EXHIBIT 5 The Centennial of the First U.S. Waiver Reserve Table

by Tom Penn-David

For students of disability insurance, Exhibit 5 of the annual statement provides a fascination similar to the excitement of a paleontologist exploring the layered sediments of a pre-Mesozoic rock formation. The earliest history of disability insurance in the U.S. featured waiver of premium benefits along with either acceleration or annuity benefits provided under life insurance policies. The first disability benefits in the U.S. were offered as additions to life insurance policies by Fidelity Mutual in 1896 and by the Travelers in 1904 (Woodward, 1920). In 1912, Arthur Hunter, an actuary at New York Life, created the first valuation table for disability waiver reserves using data from several large mutual companies. As of the 2010 annual statement, five companies are still holding waiver reserves valued using Hunter's Table (one company cites American Experience but is now holding zero reserves).

Historical Development

Subsequent to Mr. Hunter's path-breaking efforts, the Actuarial Society of America (ASA), predecessor of the present-day Society of Actuaries, sponsored the Actuarial Studies No. 5 in 1920 concerning *Total Permanent Disability Benefits in Relation to Life Insurance* with Mr. Hunter as principal author. In 1926, the ASA's Joint Committee on Disability Experience published the first widely used valuation table. As of 2010, 71 companies still report some reserves valued on that table. In 1952, the current individual standard table was published by the Society of Actuaries reporting on experience from 1930 through 1950. It appears that no comparable table was published for group life waiver reserves until Raymond Krieger published his 1970 valuation table using intercompany data reported in 1968. At that time, he estimated that industry reserves for group life waiver were approximately \$400 million. That table was updated in 2005 to provide the most recent major basis for waiver reserves.

The evolution of actuarial tables demonstrates both the immense changes that have occurred in U.S. public health during the last century and important changes to contractual benefits provided under waiver provisions. For the 1926 table, the leading causes of disability were Tuberculosis followed by Insanity and Paralysis. In the 1926 table, disabilities from WW I were excluded and in the 1952 table, exposures during the years 1939-46 were excluded from the calculation of incidence rates due to disabilities incurred in WW II. By 1952, tuberculosis was still a major cause but had dropped to 15.4% of coded claims (Benefit 1 – period 1) while cardiovascular claims now accounted for 27.8% of coded claims and cancer for 5.7% (Rheumatism was slightly more prevalent at 5.8% of coded claims).

Contract changes over time have influenced the way in which experience has been tabulated. For Hunter's table, most benefits involved waiver of premium for claims that occurred due to conditions that were deemed to constitute total and permanent disability. The 1926 table reported 3 classes of benefits – class 1 involved Total and Permanent Disability and classes 2 and 3 required three months of disability after which total disability caused premium to be waived (and benefits based on acceleration of face amounts to be paid). For the 1952 table, five benefits were tabulated:

- Benefit 1: Total and permanent waiver plus monthly benefit of 1% of face;
- Benefit 2: Presumptive disability after 90 days, waiver only;
- Benefit 3: Presumptive disability after 90 days plus 1% of face monthly benefit;
- Benefit 4: Presumptive disability after 120 days plus 1% of face monthly benefit;
- Benefit 5: Presumptive disability after 6 months, waiver only.

Industry Aggregates

As of year-end 2010, total industry life waiver reserves for disabled lives were reported at \$15.2 billion of which \$6.8 billion were for ordinary life and \$8.4 billion were for group life. The roughly 2,000 distinct reserve blocks reported for disabled waivers are largely broken into two distinct bases for individual life and two distinct bases for group life. Three of the four significant bases (1952, 1970 and 2005) represent studies published under the auspices of the Society of Actuaries. The fourth (OASDI) refers to a table published in 1978 by the Office of the Chief Actuary for the Social Security Administration based on mortality for disabled workers under the Social Security disability system from 1972 through 1976. It is only used by four insurers but, as can be seen, they are insurers with sizable blocks of life waiver reserves. Table 1 (on the next page) shows total reserves held by major basis (amounts in \$000's):

Other intercompany bases include Hunter's Table, CIDA, 64 CDT and the 41/58/80/2001 CSO tables. Both CSO and CET mortality bases have been used. A significant number of companies use their own experience or report simple percentages of face amounts or other short-hand methods. Some of the lesser reported bases are shown in Table 2 (on the next page).

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On the face of it, a few implications fall out of the data. One implication is that either (a) individual waiver experience has been remarkably stable since 1950 or (b) the volume of reserves held on the 1952 table is not perceived as a significant enough element of company balance sheets to justify an industry experience update. By contrast, when the 2005 group waiver table was published, various presentations and studies noted significant reductions in reserves from those held under the 1970 table. A second matter of interest concerns how many companies have and have not moved from the 1970 group table to the 2005 table. Companies' ability to move existing group waiver claims to the 2005 table may be subject to regulatory as well as system constraints.

It is worth noting that the difference in customary individual life waiver provisions versus group life waiver provisions may account for some differences in how the industry looks at reserves for each. Individual life waivers are likely to be attached to a permanent life insurance product and therefore will waive premiums for a permanent disability until the insured has deceased. Increasing longevity of disabled persons is likely to unambiguously increase the cost of individual life waivers. By contrast, the majority of group life waivers provide a continuation of group coverage to age 65 (or other normal retirement age, depending on provisions). Therefore, as shown by the studies comparing the 1970 table to the 2005 group waiver table, greater longevity is likely to actually reduce the cost

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Basis	Individual	Ind %	Group	Group %
1926	18,253	0.3%	619	0.0%
1952	4,772,552	69.9%	61,799	0.7%
CSO (Various)	137,457	2.0%	6,561	0.1%
1970	982	0.0%	3,740,902	44.5%
2005	5,203	0.1%	3,769,296	44.9%
OASDI	1,690,998	24.8%	0	0.0%
Other	206,749	3.0%	821,025	9.8%
Total	6,832,196		8,400,202	

Basis	Individual	Ind %	Group	Group %
Group - Generically Described	306	0.1%	383,078	46.7%
Experience	—	0.0%	308,997	37.6%
Japanese Table	28,244	13.7%	—	0.0%
CIDA	27,748	13.4%	2,005	0.2%
IBNR	82,621	40.0%	27,432	3.3%
Other	67,831	32.8%	99,511	12.1%
Total	206,749		821,025	

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of group waiver reserves as more individuals outlive the waiver coverage.

As Sam Rayburn famously said, "A billion here and a billion there, pretty soon you're talking real money." On an industry basis, the total of all waiver DLRs is over 50% of the amount of all U.S. noncan disability DLRs. They are not only a fascinating reflection of insurance and societal history over the last 100 years but they also suggest that careful review of their bases may have material financial impacts on insurers.

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