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Mr. Richard B. Weeghman
Editor
The Aviation Consumer
75 Holly Hill Lane
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Dear Mr. Weeghman:

I have been involved with the questioning of the Age 60 Rule since 1984, giving testimony before Congress in 1985, and in several court cases since then. When your Aviation Consumer went "public" with the chart by Billings that was in the OTA (Office of Technology Assessment) report I decided that I should shed some light on your article that might be misleading (Are Old Pilots Safe?; 1 Nov '91); no fault of yours - you were only reporting about the OTA report.

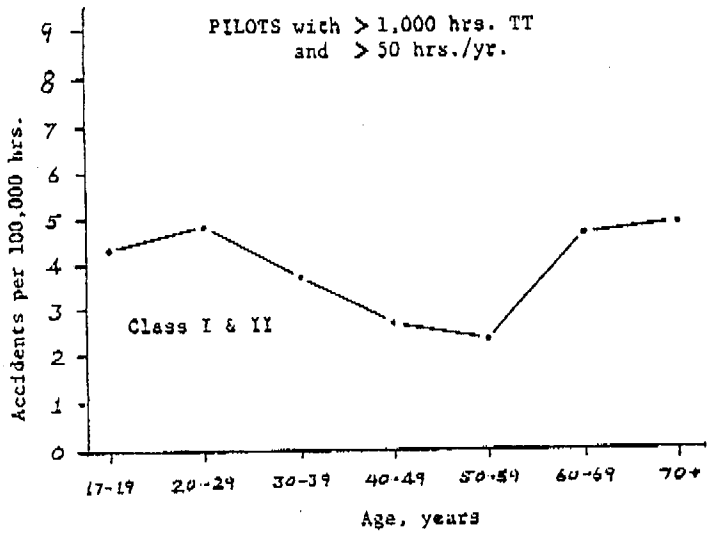
First, OTA got its data from Billings who derived his data from a study by Golaszewski who got his data from the FAA, and the FAA uses Golaszewski's [illegible] Billings' data, and the OTA study to support maintaining its position keeping the Age 60 Rule. Gosh, it comes "full circle".

Second, OTA merely used Billings' data, but the scientists responsible for their report did not carefully look at what they were using. The Billings' data is grossly misleading. By the way, Billings did not make those graphs as a part of his NASA employment. NASA makes no claims about the veracity of Billings data cited in the OTA report (see Billings' letter enclosed).

Third, Charles Billing used the data in Golaszewski's study, and by subtracting Golaszewski's data on Class III medically certificated pilots from that of all pilots (Class I, II, and III medical certification) he obtained the data on all pilots with Class I and II medical certificates. That is acceptable with some reservations (see Chin's letter enclosed). Then Billings plotted the accident rates as a function of age levels for the Class I and II pilots. This has been said to be reflective of those in the commercial airline industry since captains must have a Class I medical certificate and co-pilots and engineers have a Class I or Class II medical certificate. Of course you and your readers realize that, although it encompasses all Part 121 air carrier pilots, the group of pilots holding Class I and II medical

certificates includes many other pilots; such as instructor pilots, Part 135 pilots, and many corporate or private pilots operating under Part 91.

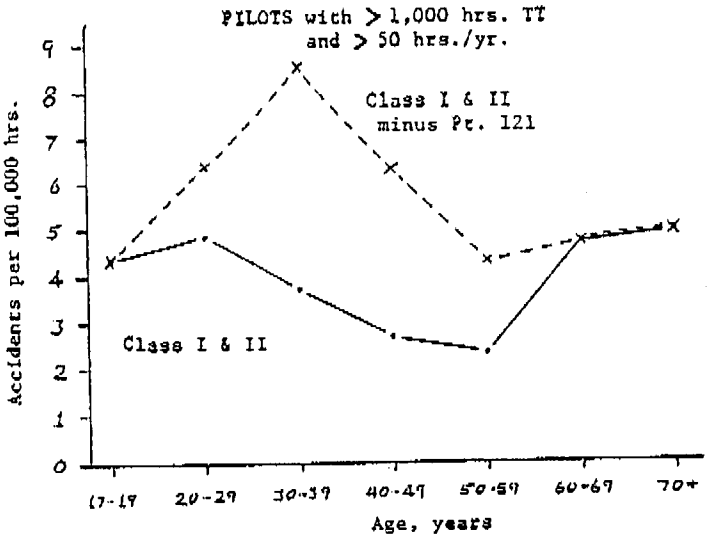
Let's look at Billings' graph below. Recall that after age 60, there are no pilots operating under Part 121 because of the Age 60 "Rule". The accident rate is calculated by dividing the number of accidents attributed to that group by the amount of flight hours that group had. The Golaszewski study used only general aviation accidents in its data, commercial air carrier accidents were excluded. Now, prior to Age 60 we have the general aviation (GA) accidents divided by total flight time (GA flight time and Part 121 flight time), and after Age 60 we have GA accidents divided by only GA flight time.



So, before age 60 we have "apples and oranges" in the denominator and after age 60 only the "oranges" are in the denominator. Thus, the accident rate prior to age 60 is heavily suppressed because of the inflation of the denominator with Part 121 flight time that is not available after age 60.

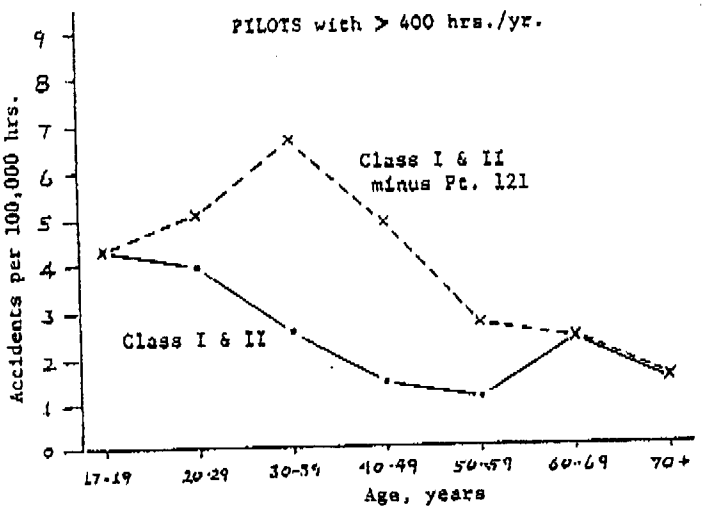
Going to the period of time that the Golaszewski study covered, one can obtain the total flight time attributed to Part 121 operations and the distribution of Part 121 pilots by age (FAA Aeromedical Certification Statistical Handbook for years 1976 through 1980). With this information, an estimate of the hours flown by airline pilots by age group can be made, multiplying the total Part 121 hours by the proportion of 121 pilots in each age grouping. The airline flight time per age group has to be estimated in this way because we have not been able to obtain precise information on airline pilots by their age groups from ALPA, the FAA, or other sources.

In the next graph, the data shows what the accident rate looks like for Class I and II pilots without Part 121 flight time in the denominator. That is, it presents for Class I and II medically certificated pilots, the general aviation accidents divided by the general aviation flight time for each age group.



Note from this figure that Class I and II pilots in their 20's, 30's, and 40's have higher accident rates than those in their 50's, 60's, 70's.

Most of your readers must realize that 50 hours per year represents almost minimal currency and that airline pilots have significantly more than 1,000 hours of flight time (note that Billings' graph was for pilots with more than 1,000 hours TT and at least 50 hours/year). So I am enclosing an additional graph derived from the Golaszewski data regarding pilots who, on their medical certificate application, report having more than 400 hours flight time the previous year. Now one could consider these pilots as current.



The lower curve is the accident rate for Class I and II medically certificated pilots. It is the same apples and oranges phenomena before age 60 compared to after age 60 (explained previously). The upper curve shows

general aviation accidents divided by general aviation flight time for each group; it does not include Part 121 accidents or Part 121 flight time. Again, it is clear that the accident rates for pilots between 20-49 years of age is greater than for all of the pilots over 50 years of age.

So, to paraphrase the beginning of your last paragraph, *the only way out is NOT to keep the mandatory retirement age rule*, but to let the pilots fly and utilize their skill and wisdom developed with their vast experience. Use the semi-annual checks to weed out those who can no longer perform up to standards. There is no data to support the FAA's Age 60 rule for Part 121 operations.

Sincerely,

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Professor, and Acting Head, Aviation Research Lab
Professor of Mechanical and Industrial Engineering

JMK/ksa