

## “CORPORATE/COMMUTER AIRLINES METEOROLOGICAL REQUIREMENTS”

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Thank you very much. I appreciate the opportunity to be here. I also appreciate following Dennis Newton and John Pappas, because they have very adequately covered the needs of the area that I am going to address. Corporate/executive operations are part of general aviation; but they tend to follow more the philosophy of FAR Part 121, than do the smaller operators to which Dennis Newton was referring. The commuter operators follow FAR 135, and, to a certain extent, FAR 121; so they also fall in between the type of characteristics that Dennis and John mentioned.

Within the system we call aviation weather, communications represent an element of primary importance. Man cannot influence the weather over any scale of significance to aviation. He can only observe what exists and predict what is likely to happen based upon current and historical data. To counter our inability to influence weather, we have only our ability to measure and communicate what is happening. Therefore, I add to the comments of other speakers my support for the relevance of this year's workshop theme, "Communication and Application of Atmospheric Data for Aviation Needs".

While the rapid and accurate communication of weather phenomena is important to almost everyone, nowhere is it more important than within aviation. As Mr. Newton so appropriately observed, the people who need the most knowledge about weather are those that fly through it. Furthermore, the consequences of limited, untimely or nonrelevant knowledge of weather are potentially more hazardous to the aviator than to any other group.

To provide emphasis to that last point—namely, the potential hazards of weather to aviators—, I wish to refer to the final report of an informal panel on general aviation safety, which was submitted to FAA Administrator Helms in February 1983. I served as Chairman of that panel.

Data compiled by the National Transportation Safety Board (NTSB) indicates that weather is a cause or factor in about 40 percent of fatal accidents within general aviation. Of equal significance, is the fact that the classification "pilot-inadequate preflight preparation or planning" is the leading cause or factor in nonfatal accidents

(12 percent), and a cause and factor in about 13 percent of fatal accidents. Often, the specific area where preparation and planning were lacking was related to weather.

Where accidents involve weather-related causes or factors, the mishap is more likely to result in a fatality. Of the 10 leading causal citations attributed to nonfatal accidents in 1979, for example, only one — unfavorable wind conditions — explicitly referred to weather. In accidents involving fatalities, however, four of the 10 leading causal factors related directly to weather.

Low ceilings typically is a leading causal factor in fatal accidents. In 1979, for example, it was a cause or factor in 25 percent of all fatal accidents; no other causal factor was more prevalent in mishaps involving fatalities. The next most frequent citation was "pilot-contained VFR flight into adverse weather conditions" (19 percent of 1979's fatal accidents). "Weather-fog" was the fourth most-often cited causal factor (18 percent); it came right after "pilot failed to obtain/maintain flying speed" (19 percent). "Weather-rain" was the ninth of 10 leading causal factors for 1979 (7 percent). (Causal factors total more than 100 percent due to the assignment of more than one cause or factor to an accident.)

Two other top-10 causal factors in fatal accidents—"pilot-inadequate preflight preparation or planning" and "pilot-improper inflight decisions or planning"—often involve the gathering or use of weather information. In fact, six of the 10 leading causal factors for the year involved weather in some form.

Although specific data for 1979 are used here for emphasis (since 1979 was the year in which the lowest number of fatal accidents occurred for the period 1967 to 1980, the last year for which the panel had detailed breakdowns of data), the results presented do not vary appreciably from other years and are applicable for the present time.

While the data referenced by the General Aviation Safety Panel's Final Report applied to all categories of general aviation, 1979 accident data compiled by the NTSB indicates that corporate/executive and commuter operation suffer similar impact from the weather. In 1979, for example, weather was a factor in eight (57 percent) of the

14 corporate/executive fatal accidents and in five (38 percent) of the 13 commuter fatal accidents.

Returning to the theme of communications, Mr. Newton quite appropriately observed that general aviation is a broad term that encompasses all flying other than scheduled airline activity and military flying. Hence, corporate/executive and often commuter operations fall within the broad classification of general aviation.

Mr. Newton addressed the communications needs of the aviator who flies below 25,000 feet, is involved in non-revenue transportation, does not earn his living principally as a pilot (which implies a less active knowledge of aviation and a lower level of aeronautical skills for the average pilot, but such may not be the case for all nonsalaried aviators), operates aircraft that generally are less equipped for weather flying than the corporate/executive or commuter pilot, and has marginally more limited resources than pilots within corporate/executive or commuter aviation.

In many cases, however, corporate/executive and commuter operators have many of the same characteristics as the group Mr. Newton addressed. A reasonable and important percentage of corporate/executive operations occur below 25,000 feet, and most of the current schedules of commuter/executive activity is conducted in accordance with FAR Part 91, while commuters operate to FAR 135 or possibly FAR 121. But weather is insensitive to the FAA's operating regulations; there is no such thing as a FAR Part 91 thunderstorm. The more relevant regulation refers to aircraft certification (CAM Part 3, or FAR Part 25), and aircraft certificated to each of these regulations can be found in each classification of general aviation.

Thus, much of what Mr. Newton outlined and recommended in his presentation applied equally well to corporate/executive and commuter aviation. I wholeheartedly endorse his comments on weather training and feel that the concept Mr. Newton proposes applies equally well to all aviators, no matter how active. His comments concerning the adequacy of weather products, and, to a lesser extent, weather services, also apply to corporate/executive and commuter operations.

It is in the areas of recent experience, equipment flown by the larger companies and, most significantly, in communication resources, that corpo-

rate/executive and commuter operators differ from the group Mr. Newton addressed.

The average member company of the National Business Aircraft Association flies its aircraft over 600 hours per year, and over 63 percent of the NBAA fleet are turbine powered. The average member company of the Regional Airline Association flies its aircraft over 1,300 hours per year, and over 47 percent of the RAA fleet is turbine powered. These statistics differ markedly from data characterizing the typical general aviation pilot who supports his flying habit with discretionary, after-tax dollars. Such an individual probably flies less than 40 hours per year.

The corporate/executive operator typically flies an aircraft that is radar-equipped and, to an increasing extent, is also fitted with stormscope. The commuter operator flying aircraft with the capacity for nine or more passengers also employs either radar or stormscope for onboard avoidance of thunderstorms. FAR Part 25 aircraft flown by corporate/executive and commuter operators are usually equipped and certified for flight into known icing conditions. If an operator flies an aircraft not specifically approved for flight in known icing, it is usually equipped with anti-icing and deicing provisions. Thus, in terms of onboard capacity to cope with challenging weather, corporate/executive and commuter operators are better equipped than other segments of general aviation.

Aside from experience and flight hardware, the corporate/executive operator and, to a lesser extent, the commuter airline also differ from other general aviation aviators by the means they use to communicate with the providers of weather data.

Most of the larger corporate flight departments subscribe to one of the private weather services, and many use two sources of weather data other than Flight Service Stations. The FSS network typically is employed only for filing flight plans and for weather updates while en route. A typical medium-sized flight department, which operates two British Aerospace 125-700 business jets and one Beech King Air, subscribes to Universal Weather, as well as Weather Services International (WSI), and will soon install a VCR and TV system to record the aviation weather program offered by the Public Broadcast System.

Although one flight department was considering an alternate source of private weather services be-

cause its primary supplier had doubled its fees, cost is usually not a consideration. Service is the primary concern, and most corporate operators in the larger metropolitan areas feel that the FSS system is not able to provide timely service.

The commuter operator is far more cost-sensitive than his corporate brethren. Hence, he is far more likely to use the Flight Service Station as his source of weather information. But private, computer-based weather services, such as WSI and Global Weather Dynamics, are also used in this area of general aviation.

Primarily because corporate/executive and commuter operators employ experienced pilots, fly reasonably well-equipped aircraft and use alternate sources of obtaining weather data, their needs for weather data extend beyond safety considerations.

For the corporate flight department, scheduling predictability is extremely important. The corporate aircraft exists to minimize the unproductive time and hassle often associated with public travel. Provided the multi-million dollar corporate jet can move important decision makers to the places where problems need to be solved and contacts made, (all the while providing a comfortable environment that can be used for work en route or relaxation), the investment in corporate aviation is worthwhile. But, if the dispatch reliability of the aircraft is low, or if the scheduling predictability is poor for any reason, the corporate aircraft becomes a questionable investment. The boss accepts the fact that his flight department cannot change the weather, but he becomes quite upset when his crew can't make the schedule they told him they could make.

Thus, accuracy of forecasting weather is important, not only for safety consideration, but also for scheduling consideration. In fact, scheduling predictability is a particularly critical need for corporate/executive operators.

Because service is so much a part of corporate/executive activities, a need exists for current data on winds aloft and turbulence. Corporate flight departments also pride themselves on the efficiency

of their operations, thereby providing another need for accurate winds aloft data.

Commuter operators share with corporate/executive aviation the need for scheduling predictability, but more for the reason of avoiding the costs of diverting to an alternate or needlessly cancelling a trip than for the reason of annoying the boss because the company aircraft didn't land where the flight department said it would land. Such is not to infer that the commuter operator is disinterested in providing good service, for on-time scheduling and smooth rides are also important to this class of user. But operating costs and the impact of weather on those costs are far more important to a commuter operator than they are to the corporate flight department.

Commuter and charter operators that rely on the FSS system state that a need exists to standardize the quality of the weather briefing they receive from the FSS specialist. Perhaps, attendees at this seminar could consider the advantage of a standardized briefing format for all users. All FSS personnel would be trained to use the standard weather briefing format and would deviate from it only if requested to do so by the pilot. Such a procedure would assure a higher level of standardization and quality than currently exists.

Another common need that was expressed by corporate operators and by commuter operators who used private weather services was the ability to file flight plans via the same computer terminals they currently use for obtaining weather data. Operators want to interface directly with the FAA's computer facilities that process flight plans, and they want a computer-based confirmation that the flight plan has been received and approved. If such a system of computerized flight plan filing were possible, the popularity of private, computer-based weather services would be enhanced.

To summarize, the needs of the corporate/executive and commuter operators center principally on facilitating the communications of actual weather data, particularly data that influence schedule predictability, ride comfort, operating efficiency, and on using existing non-FSS communication facilities to input flight plan information.