Analysis of FAA Proposal to Expand MSP Class B Airspace

This analysis of the FAA proposal was prepared by members of the Minnesota Soaring Club, who fly gliders based at the Stanton Airport and who fly gliders to and from Bensons Airport. Many of its members are also airplane or helicopter pilots involved in aviation activities other than soaring, including, but not limited to: airline operations, Part 135 operations, airport management, FBO operation, business travel, personal travel, flight instruction, sport and recreational aviation activities, ATC, and other FAA functions. This membership has expertise in most of the activities affected by the proposed expansion of Class B and that expertise is reflected in this response to the FAA proposal.

The details that follow explain many impacts on general aviation and on the community, offer suggestions for mitigating the impacts, analyze the information presented with the FAA's proposal to expand the Class B, and present recommendations for further study relative to expanding the Class B.

While the Minnesota Soaring Club respectfully requests no expansion of the Class B, it also respects the FAA's expertise and judgment in the matter and will support expansion shown by further explanation or study to be necessary for safety or otherwise to be in the best interest of all concerned.

Negative Impacts on the Flying Public of the Proposed Class B Expansion

Impact Summary

The proposed expansion will restrict training and flight opportunities for glider pilots operating at the Stanton Airport and at the Bensons Airport and will increase the likelihood that those gliders will land off-airport. Restricting training and flight opportunities will reduce the economic viability of the Minnesota Soaring Club, the Redwing Soaring Association, Bensons Airport, and the Stanton Airport, and may thus reduce general aviation operations and participants. Increasing off-airport landings will increase the chances of property damage and personal injury. Compressing traffic below an expanded Class B will increase the chances of mid-air collisions. Increasing traffic, especially jet traffic, at low altitudes will disturb both residents and wildlife and will reduce home values. Pilots operating to or from airports under the Class B or transiting the Class B will experience additional delays, costs, and inconvenience.

Impact Details

Safety Impacts

1. Gliders landing off-airport or crashing because of altitude restrictions. An expansion with a floor at 4,000' around the Stanton Airport will cause glider pilots to operate with less altitude margin and they will more frequently find themselves lower

than is safe with respect to their distance from the airport. To glide 5 nm, the shortest distance from the Stanton airport to the proposed boundary of Class B airspace, from 4,000' MSL to 1,920' MSL, a safe pattern arrival altitude for gliders, requires a glide ratio of 14.6:1. Safe practice, recommended in the Soaring Flight Manual, which is referenced in the FAA Practical Test Standards for glider certificates, is to discount the glide ratio 50% to compensate for unknown sinking air. The glide ratio is further reduced by headwind. Wind in the area is typically northwest, especially on the best soaring days, and, therefore, headwind is a typical condition returning from southeast of the Stanton Airport. Of the 27 gliders based at Stanton or owned by members of the Minnesota Soaring Club, many cannot achieve the 29.2:1 glide ratio required for safe operation in a no-wind condition and most cannot safely return to the airport under the proposed Class B against typical headwinds.

This will be a serious matter for glider pilots attempting to get out from under the Class B in order to enjoy good soaring and cross country flights. When glider pilots find they are low, they routinely select a suitable landing site off-airport. While this may be safer than attempting to reach the airport, any off-airport landing increases the possibility of property damage and personal injury. Sometimes, especially in marginal conditions as opposed to clearly being too low, pilots may decide to return to the airport and may crash land in the attempt as a result of unanticipated sinking air or other factors, thus further increasing property damage and personal injuries.

At present, glider pilots operating from the Stanton airport usually maintain sufficient altitude to safely return to the airport. They can operate up to 8,000' MSL in the Class B veil without transponders. They set their low altitude limits conservatively and, upon descending to their limit for any given radius from the airport, they scurry to the airport to arrive with more than enough altitude for normal pattern operation and landing, thus maintaining a safety margin. At present, <u>off-airport landings</u> of gliders in training or pleasure flights around the airport are <u>very rare</u> because the pilots maintain plenty of margin.

ATC will not clear gliders into the Class B. They can't "maintain an assigned altitude" and, because of limited electrical power, they aren't commonly equipped with transponders.

Pilots flying gliders under the expanded Class B, if its floor is 4,000', will have to choose between operating without their customary safety margins or not flying.

2. Traffic compression and Mid-air Collisions. General aviation traffic operating to and from airports under and near the expanded Class B will be compressed between narrow upper and lower altitude limits and that compression will increase the potential for mid-air collisions and for off-airport landings in populated areas (result of not having altitude with which to glide away from populated areas in emergencies). Experience operating in the vicinity of the present Class B is that ATC typically diverts general aviation aircraft around and under it rather than clearing them through it. Traffic

compression is an observed affect of the present Class B airspace and will certainly be worsened by expanding it. Increased traffic in the vicinity of Stanton and Bensons Airports will especially increase the chances of collisions between gliders and transiting airplanes.

Economic Impact and Diminished Glider Operations, Pilots, and Training

3. The proposed changes will make training difficult and make cross-country soaring impossible for pilots at the Bensons Airport. The 4,000' MSL shelf (3,000' AGL) will go from its current boundary 3 miles north-northeast of Bensons to 13 miles. Entry to Bensons will require a glide ratio, with no wind and discounted for sink, of 79:1. Such gliders are not available and the only glider activity possible at Bensons Airport will be local training flights.

4. The proposed expansion will make cross-country soaring more difficult for pilots at the Stanton Airport, considering that most good soaring days occur with winds from the northwest. Returning to Stanton will require pilots to fly upwind under the ceiling. Given the performance limitations of gliders based at Stanton and the factors cited in item 1 above, cross-country operations will be impossible on some days, impossible for some gliders on additional days, less safe on most days, and generally more demanding of pilot skill and aeronautical decision making. Less experienced pilots will be affected more than highly experienced pilots.

5. At present, pilots engage in soaring record and badge flights from the Stanton Airport and from the Bensons Airport. These usually start at just below 3,281' (1,000 meters) AGL, 4,201' MSL. It is highly unlikely that ATC will authorize gliders to enter Class B and it is recommended (AIM) that aircraft remain well below the floor of Class B. Thus, a 4,000' MSL floor will prohibit pilots from beginning these flights at the optimum altitude, and will handicap them when flying badge or record flights.

6. The proposed expansion will preclude soaring from Stanton on many of the best soaring days. Glider pilots will give up the activity and potential pilots will not begin soaring. Soaring in Minnesota is confined to the metropolitan area where the population is concentrated. In calendar year 2000, 5056 glider tow and glider flight operations were completed at Stanton airport. 2088 such glider-related operations were completed at Bensons airport. These activity levels will not be maintained if the Class B is expanded as proposed.

Glider pilots do not usually fly downwind unless they can fly at high altitude to be able to safely return to the airport.

Northerly wind, typical of the best soaring days, combined with a low operational ceiling will confine glider operations at the Stanton Airport to a small volume of airspace northerly from the airport. Cross country flights, including pleasant excursions to even modest distances from the airport will be impossible on many days. If pilots are to

proceed southerly when wind is northerly, they must fly at altitude higher than 4,000'. At present, they often approach the 8,000' top of the present Class B veil in order to enjoy a flight.

In addition to the wind factor, good lift to maintain glider flight is often concentrated at altitudes above 4,000'. Lift below 4,000' is often too weak to sustain flight.

7. Increased Cost of Soaring at Stanton. Reduced opportunities to fly will increase the cost per flight. Most of the cost of owning and maintaining gliders is independent of the number of flights flown. Fewer flights flown per year directly increases the cost per flight. The Minnesota Soaring Club will have to increase the dues and fees it charges its members in order to cover costs with fewer flights. The airport operator will have to increase airport fees for similar reasons, and that will further increase the cost of maintaining the Minnesota Soaring Club. Pilots flying their own gliders will experience similarly increased costs. Increased costs will decrease the number of glider pilots flying from Stanton airport, which will further increase costs to those remaining.

8. Increased cost of all operations, airplane as well as glider ops, at Stanton. At present, glider operations contribute a high percentage of the revenues used to maintain the Stanton Airport and its services. When these revenues are reduced by reduced glider operations, the cost per operation of airplanes must increase. That will further reduce general aviation operations and participants.

9. Moving Glider Clubs, Reducing Glider Activity, and Closing Airports. Worse case impacts would be for the Minnesota Soaring Club to move from Stanton or for the Redwing Soaring Association to move from Bensons. Members finding the distance to a site outside the Class B too great would quit soaring. Cessation of soaring operations at either airport is likely to cause that airport to close.

10. Dissolving the Glider Clubs, Reducing Glider Activity, and Closing Airports. If the present proposal is implemented, the glider clubs at Stanton and at Bensons will lose members, as explained in items 7 and 9 above. As a result of losing their bases of membership dues and flight fees, the clubs will undergo financial hardship and may dissolve. Dissolution of either club will likely close the affiliated airport.

11. Diminished Glider Training and New Glider Pilots. Every one of the above impacts will reduce the number of persons learning to fly gliders and earning pilot certificates or glider category ratings. This will reduce the number of glider pilots and aircraft operations in Minnesota in the future.

12. Elimination of Trophy Flying. At present, glider pilots from Stanton Airport and Bensons Airport engage in a friendly competition. They fly from one of those airports to the other to posses a trophy, known as the Delbert. Their flight path typically goes around the Class B so they can maintain safe altitude enroute. Extending the Class B to

30 nm from 4,000' to 10,000' will preclude continuing this activity, thus further reducing the pleasures of soaring from either airport.

13. Elimination of Skydiving at Stanton. Another large part of the revenue to support the Stanton Airport has been skydiving. Although skydiving operations there were suspended in 2000, it is hoped they will resume. They cannot if Class B airspace is extended over the airport and that will eliminate the possibility of regaining that revenue.

14. Delays and added costs associated with many general aviation operations at airports in the expanded Class B and with transiting the expanded Class B. The present MSP Class B airspace delays general aviation operations because ATC either cannot or chooses not to, with current staff and equipment, permit much VFR traffic to transit through Class B airspace. For example, aircraft that request and receive a clearance to proceed southerly or southeasterly from the Crystal airport are typically routed <u>around</u> the Class B rather than through it. On the basis of experience transiting the Class B in airplanes, it is estimated that most pilots choose not to request a clearance, but choose instead to fly under and around the Class B. This choice eliminates the extra distance and delay associated with complying with an ATC clearance. ATC does not count those operations. Expanding the Class B airspace will certainly increase the delays, costs, and inconveniences of getting around Class B, whether with or without ATC service.

15. Additional ATC staff and equipment costs. The only way that the expansion can be accommodated with <u>no</u> additional staff or equipment is to exclude the operations that presently use the airspace to be added to the Class B. Otherwise, both staff and equipment must be enhanced with attendant increased operational cost for ATC.

16. Delays and Increased Costs of Overflight. Raising the ceiling of MSP's Class B from 8,000 feet to 10,000 feet would pose a serious operational limitation to those pilots wishing to over fly this airspace. In the absence of any mitigating action, such as charted VFR flyways, non-participating traffic would be forced to circumnavigate the MSP Class B. This impact is compounded by the proposed expansion of the Class B's lateral boundaries.

Environmental and Economic Impacts

17. The proposed expansion will disturb residents and reduce property values. There are two additional sources of noise affecting the surface environment. 1) Compressing VFR general aviation traffic in the lower levels of the 20 NM to 30 NM area will increase noise and disturbance. 2) Lowering heavy traffic to 4000 MSL in the new Class B volume will further increase noise and disturbance. Many residents and communities in the affected areas are not aware of the potential impact at this time; they will voice their objections and cause major problems for the FAA, the Metropolitan Airport Commission, and the operators when they notice the change.

18. The proposed expansion, with compressed and lower operations by both jet and non-jet aircraft noted above, will disturb wildlife under the expansion. It is important that the many agencies, organizations, and individuals concerned for wildlife be advised of the proposal and permitted to participate in the studies and decision making that must precede implementation of the proposal.

Mitigation of Impact

The Minnesota Soaring Club recommends resuming the study to more completely evaluate the safety and operational factors associated with the proposed expansion and to seek alternatives that <u>do not expand</u> the Class B or that expand it less than originally proposed. One alternative to accommodate a continuing increase of traffic at MSP without expanding the Class B is to create a combined air and ground transportation system employing both MSP and RST airports with high-speed surface transportation between them, to handle increasing passenger and freight traffic to and from MSP without increasing flight operations there.

After further study, including assessing the many adverse impacts and the alternatives to expanding Class B, it may be concluded that the only necessary expansion is a corridor for simultaneous parallel approaches to runways 12-30. On the other hand, further study may show that it is appropriate to also expand the radius, but with floors in the outer ring higher than initially proposed, with accommodations for soaring flights at the Stanton and Bensons Airports.

These alternatives will impact the flying public much less than the simple cylindrical expanded Class B, will support generally safer and more efficient operation of aircraft, airports, and other infrastructure, and will achieve added safety for air carrier operations as well as the proposed expansion.

It is, however, inappropriate to focus attention on those alternatives until the underlying factors are more completely identified and analyzed.

Analysis of the FAA Study Report

Information provided by FAA at the public meetings fails to show a logical connection between increased safety and either raising the upper limit of Class B airspace or extending its radius. The distributed material* does not display any logical cause and effect analysis showing how expanding the Class B will increase safety commensurate with the many negative impacts on the flying public. Nevertheless, it is recognized that simultaneous parallel approaches to runways 12-30 may require some expansion and further study may confirm this.

^{*} Refers to the report distributed by the FAA at the public meetings January 9 and 13, 2001

Furthermore, the study report does not address any alternatives to expanding Class B and does not show why the proposed expansion is the best approach among alternatives.

The study does not address the impact of new technologies, such as, but not limited to, GPS, WAAS, and Automated Dependent Surveillance-Broadcast (ADS-B) and how they will impact the staff and equipment requirements and the traffic flow to and from MSP.

Failure to include facts about the impacts on the flying public makes the study <u>incomplete</u>. It is important to base a final decision on a completed study, with consideration of all impacts and alternatives.

The referenced FAA Handbook 7400.2D (now 2E), Procedures for Handling Airspace Matters, does not recommend national standards for Class B airspace limitations. The order stipulates that the vertical or upper limit of the airspace <u>normally</u> should <u>not exceed</u> 10,000 MSL and the lateral or outer limit <u>shall not exceed</u> 30 NM radius from the primary airport. As part of the reasoning behind the proposed airspace changes, the executive summary states that it is imperative that the Minneapolis Class B airspace be expanded to conform to a national recommended standard that in fact does not exist..

The summary^{*} states, but the Facts do not explain further, that arriving air carrier traffic routinely descends through 10,000' 30 nm from MSP. How does this bear on the issue? How is 10,000' different from 8,000', 12,000', or any other arbitrarily selected altitude used to define Class B airspace? The fact is that Class B airspace does not connect to Class A airspace to provide positively controlled airspace from departure to destination, and accident and incident statistics show no need for such a connection or control.

The summary^{*} asserts, but the Facts do not provide numbers or otherwise explain, that controllers <u>frequently</u> observe unidentified uncontrolled VFR aircraft transiting the area above the present Class B airspace and must direct air carrier traffic to avoid conflicts. Doesn't this happen anywhere outside Class A and Class B airspace? So how does raising the ceiling of Class B change this, except they will transit 2,000' higher? Furthermore, airplanes going to or from MSP do not need airspace directly above MSP. Their climb and descent profiles, combined with turning required for transitioning between approach or departure and the enroute structure, should be used to establish useful upper, lower, and lateral boundaries on the Class B airspace.

There are several alternatives that should be explored to ensure the safest possible environment for all traffic in and transiting through MSP Class B airspace as it currently exists. One such option might be the establishment and charting of VFR flyways. As the study indicates, there currently are no charted VFR flyways or corridors depicted for the MSP terminal area. At the very least it is necessary to explore the options and alternatives available in order to avoid limiting and hampering transient general aviation traffic transiting the area or operating to or from surrounding satellite airports. Fact a, VFR Routes and Altitudes^{*}. The fact that there are no VFR flyways and none are proposed implies that VFR traffic, which is excluded from Class B airspace by current practice, will also be excluded from the expanded Class B. The 6 general aviation airports mentioned, but not identified, are inside the present 20 nm boundary. The study shows no connection between these 6 airports and either increasing safety for air carrier passengers or a reason to expand Class B. Most VFR traffic to and from them operates below the present Class B. Expanding Class B airspace will continue to compress that traffic at low altitude and will force that traffic to fly farther at low altitude, with additional adverse impact on both the aircraft operators and the people and wildlife below. Placing the floor of Class B at 4,000' out to 30 nm implies that jet aircraft will operate at low altitude in that expanded space, which will very seriously disturb people and wildlife below.

Fact c, Traffic Count^{*}; to conclude that the TRACON will experience only a <u>slight</u> increase in volume can be true <u>only</u> if most of the traffic presently using the airspace to be added to the Class B will be <u>excluded</u> from the Class B airspace.

Fact d, pertaining to VFR delays awaiting ATC Service^{*}, is <u>incorrect</u>. The present MSP Class B airspace creates considerable delay of general aviation operations because ATC either cannot or chooses not to, with current staff and equipment, permit VFR traffic to transit through Class B airspace. For example, aircraft that request and receive a clearance to proceed southerly or southeasterly from the Crystal airport are typically routed <u>around</u> the Class B rather than through it. On the basis of experience transiting the Class B in airplanes, it is estimated that most pilots choose not to request a clearance, but choose to fly under and around the Class B. This choice eliminates the extra distance and delay associated with complying with typical ATC clearances. ATC does not count those operations. Expanding the Class B airspace will certainly increase the delays, costs, and inconveniences of getting around Class B, whether with or without ATC service.

Fact e, Staffing and Equipment Requirements^{*} is stated with no supporting logic. The only way that the expansion can be accommodated with <u>no</u> additional staff or equipment is to exclude the operations that presently use the airspace to be added to the Class B.

Item 6.0, Analysis of Facts^{*}. The failure to identify any more than <u>minimal impact</u> on the flying public shows a seriously incomplete study and analysis of the facts. The failure of this study to have identified and evaluated any alternatives is further evidence of an <u>incomplete study</u>.

Item 7.0, Conclusion^{*}, fails to show how increasing the dimensions of the present Class B airspace would add substantially to the margin of safety provided the flying public.

^{*} Refers to the report distributed by the FAA at the public meetings, January 9 and 13, 2001

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Conclusions and Recommendations

Given that the FAA has involved the flying public in this issue by distributing its Study Report, distributing its Proposal, conducting public meetings, and inviting comments; and given that the study has not identified impacts and alternatives; it is recommended that the FAA should withdraw or suspend the proposal while resuming the study.

It is further noted that the FAA committed, at the public meetings, to creating an ad hoc User's Group Committee. It is recommended that the FAA should create that User's Group committee to participate in further study of this issue. The Minnesota Soaring Club, the area's largest glider club, should be represented on that committee because of the serious impacts on soaring of expanding the Class B.

It is expected that further study <u>may</u> demonstrate that it is appropriate to expand the present Class B airspace with a corridor to facilitate parallel, simultaneous approaches to runways 12-30. A suitable corridor should not need to be wider than 15 nm and should not need to extend more than 30 nm. Its floor should be as high as possible. Its dimensions should be no larger than is shown necessary by logical analysis.