

**GALLATIN FIELD  
AIRPORT MASTER PLAN MINI-UPDATE  
JANUARY, 1985**

**Prepared for  
GALLATIN AIRPORT AUTHORITY  
P.O. Box 146  
Bozeman, Montana**

**Prepared by:  
MORRISON-MAIERLE, INC.  
Consulting Engineers  
601 Haggerty Lane  
Bozeman, Montana 59715  
Phone (406) 587-0721**

**In Association with:  
MONGER AND ASSOCIATES  
P.O. Box 597  
Gallatin Field  
Belgrade, Montana 59714  
Phone (406) 388-1882**

Preparation of this document was financed in part by a grant from FAA under Section 505 of the Airport and Airway Improvement Act of 1982. This document does not necessarily reflect the views of FAA.

The plan was prepared by Morrison-Maierle, Inc. of Bozeman, Montana in association with Monger and Associates, Belgrade, Montana.

1985 MINI-UPDATE OF AIRPORT MASTER PLAN  
Gallatin Field  
Bozeman, Montana

INTRODUCTION

The primary purpose of this 1985 Mini-Update of the Gallatin Field Master Plan is to guide the airport manager and authority in land use considerations which will be critical in the near future.

This update has not dealt with the primary runway/taxiway system as they are judged to be properly planned and constructed for many years to come.

The update was specifically contracted to deal with future planning for:

1. Utilities
2. Fencing
3. Building Locations
4. Auto access and parking
5. Forecast of aviation activity
6. Tie down requirement
7. Land use
  - Aviation
  - Non-Aviation

The plans and forecasts should be updated annually to assure the airport and the FAA that all recent happenings on the airport are a matter of record. Annual updates, however brief, are also helpful to plot any activity trends which will allow the ultimate schedule of airport development requirements to be adjusted to fit the actual demands placed upon the airport.

LOCAL AIRCRAFT ACTIVITY FORECASTS

Recent FAA General Aviation nationwide forecasts indicate one might expect a 4.2% annual increase in activity for the foreseeable future. A more conservative approach has been utilized in developing a 20 year forecast of G.A. activity for Gallatin Field. The following table used a 3% linear annual increase in based aircraft as well as aircraft operations.

The general aviation activity at Bozeman is a wide mixture of aircraft types as well as many different reasons for the air trip. Gallatin Field has four fixed base operations each catering to a separate market profile. The operators are:

Arlins Aircraft Service  
Gallatin Flying Service  
Eagle Flight Aviation  
Sunbird Aviation

Student flight instruction is high at Gallatin Field, probably mainly as a result of the University influence. A large number of persons under 25 years of age reside within Gallatin County.

While the State of Montana experienced a total out migration of population between 1979 and 1982, the Bozeman area experienced an increase of 4,200 persons during that same period. The local population changes are within the general airport trade area and are indicated on Table 1-1.

TABLE 1-1

Population Changes in the Bozeman Area  
1979-1982

	Population		--Change--		Components of Change	
	1979	1982	Number	%	Excess Births Over Deaths	Net In-Migr
Gallatin	42,000	45,000	3,300	7.9%	1,340	1,960
Madison	5,500	5,800	300	5.5%	77	223
Park	12,700	13,300	600	4.7%	260	340
Three Counties	60,200	64,400	4,200	7.0%	1,677	2,523

Source: U.S. Bureau of the Census.

The kinds or categories of business, commerce and personal activities which support aviation at Gallatin Field equally apply to general aviation as well as to air carriers. Gallatin County is not a depressed area nor is it a high unemployment area, it is growing at a higher than average and steady trend growth rate. Therefore, it is easier to forecast future activity here with a greater degree of accuracy; historic trends have proven this out. The local activity is naturally easier to predict than the itinerant activity, at least for general aviation.

Because of it's excellent airport, Gallatin Field experiences much itinerant activity from student aircraft practicing both VFR and IFR operations. VFR cross country flights stop in at the FSS for pilot briefings which adds to the itinerant activity.

The FAA Terminal Area Forecast estimates that the Gallatin Field general aviation activity created 38,414 operations in 1984, which would equate to approximately 373 annual operations per based aircraft. We have accepted these figures for the purpose of operational forecasting. This is an extremely conservative estimate and has been used so as to not cause a concern or question in the base figure used for the forecasts. The airport does not have a control tower so actual local VFR aircraft operations are not documentable.

To best explain the reasons Gallatin Field has been so successful in terms of increasing aviation activity, one must describe the three basic activity generators of the area. Obviously each category is simplified for this presentation and each also enjoys the quality of life and economic climate of this part of southwestern Montana. The three (3) primary categories are:

- \* 1. Business/Industry/Agricultural
- \* 2. University
- \* 3. Recreation/Tourism

Again, the fact Gallatin Field is an excellent airport, has excellent services, and space to grow and improve, is one major underlying factor in favor of its successful growth trend.

At the end of 1984, Gallatin Field had 103 based aircraft, of which 7 were multi-engine. Of the 7 MEL aircraft, 4 were piston powered, 2 turbo-prop and 1 pure jet. 6.8% is an unusually low number of MEL's to total based aircraft. This might be attributed to the lack of large industry in the trade area. The airport does enjoy a relatively high itinerant operational count from MEL's and business jets mainly from outside interests coming in for personal, business and recreational purposes. The G.A. activity statistics are shown on Table 1-2.

TABLE 1-2

FORECAST OF GENERAL AVIATION ACTIVITY-GALLATIN FIELD  
1985-2005

Year	Based Aircraft					Operations	
	(SE1)	Total	P	Multi-Engine TP	J		(MEL)
1985	99	106	4	2	1	7	39,538
1986	102	109	4	2	1	7	40,657
1987	104	112	5	2	1	8	41,776
1988	106	115	5	3	1	9	42,895
1989	109	118	5	3	1	9	44,014
1990	111	122	6	3	2	11	45,506
1991	114	126	6	4	2	12	47,000
1992	118	130	6	4	2	12	48,490
1993	121	134	7	4	2	13	50,000
1994	125	138	7	4	2	13	51,474
1995	126	142	8	5	3	16	53,000
1996	130	146	8	5	3	16	54,458
1997	132	150	9	6	3	18	55,950
1998	137	155	9	6	3	18	57,815
1999	140	160	10	7	3	20	59,680
2000	144	165	10	7	4	21	61,545
2001	147	170	11	8	4	23	63,410
2002	151	175	12	8	4	24	65,275
2003	155	180	12	9	4	25	67,140
2004	160	185	12	9	4	25	69,000
2005	163	191	13	10	5	28	71,243

(SE1) = Total based single engine land aircraft (SE1)

P = Piston

TP = Turbo Prop

J = Pure Jet

(MEL) = Total based multi-engine land aircraft (MEL)

\* For statistical purposes - all multi-engine aircraft file IFR flight plans, even though most are not full instrument operations, or under actual instrument weather conditions.

## 1. BUSINESS/INDUSTRY

The Gallatin Valley has attracted over 100 small manufacturing business ranging from "ma and pa" operations up to several employing over 100. Several High Tech industries are located in the valley using the reasoning of quality of life, available labor, cost of living, available housing just to name a few. These small companies benefit from the airport and many own their own aircraft. The financial centers serving Montana are mainly either Seattle, Denver or Minneapolis. With these distances, flying is a requirement rather than an option. The Gallatin Valley industries and businesses all depend on the airport for air freight as well as personal transportation.

Another generator of G.A. aircraft activity is the forest product industry. Aircraft depend on the services at Gallatin Field for timber management from private and governmental sectors.

The agriculture industry is the single most important income generator in the valley. The agricultural activities all utilize G.A. aircraft for such things as getting supplies or parts from distant distribution points, patrolling the sheep or cattle herds, crop spraying and transportation for those people from out of the area doing business with the farmers and ranchers. Several of the farmers and ranchers own very modern aircraft and base them at Gallatin Field.

Several businesses as well as ranches in the area are owned by out of state interests. The absentee owners visit their investments periodically and naturally do so via company owned aircraft and scheduled airlines. Gallatin Field may well have been the catalyst to cause the original transaction for making many absentee ownerships possible.

## 2. UNIVERSITY

The air activity at Gallatin Field has been bolstered many years because of the flying propensity of the University system. Air travel is necessary for Montana State University located in Bozeman, twelve miles from the airport, to reach out to service their many areas of obligation. This engineering and agricultural institute has some 11,000 or more students. There are also 1000 support staff which are often called upon to use G.A. aircraft to fulfill the numerous programs required of the land grant university. The university flights are for research and extension projects, exchange of scientific persons with other systems, recruiting of teachers and students, scientific exchanges for agricultural programs and to accommodate the large number of foreign exchange persons at the university as either students for staff members.

The sports and extra curricular activities at MSU attract persons throughout Montana, many who travel into Gallatin Field via privately owned aircraft. These activities range from big name concerts to the national college rodeo, to football and basketball contests as well as many cultural events. MSU has the largest indoor arena in Montana.

### 3. TOURISM/RECREATION

With Gallatin Field being the largest and nearest year-around airport serving Yellowstone National Park, the tourism and recreation use of the airport runs very high. Yellowstone is the oldest of the National Parks, therefore, many of the visitors are repeat visitors. Most of the foreign visitors are first time tourists and all must fly here. Yellowstone has over two (2) million visitors annually. The vast majority still travel to the park via automobile, however the trend is for more and more to travel here via aircraft, private as well as air carriers. Also, more are now visiting the Park during the snow months. The percentage of use of Gallatin Field attributed to tourism and recreation has never been documented.

As one would imagine, the splendor of the Gallatin Valley and surrounding area has caused much outside ownership of condos and second or seasonal homes. Throughout the year these owners can be viewed coming and going from Gallatin Field in their private aircraft on up to the executive jets as well as on scheduled airlines.

Another high use for the airport comes during hunting and fishing seasons. Corporate and charter aircraft as well as private aircraft come and go with people flying into Gallatin Field to partake of the three area blue ribbon trout streams and numerous mountain lakes. These people usually stay two weeks and add considerable to the local economy. The hunters are of course only fall and winter visitors and usually travel in the larger of G.A. aircraft and scheduled airlines.

As in the case with most Airports, Gallatin Field plays a big part in providing the public emergency transportation for medical or accidental happenings. Because it is located in a high recreational area and having the timber industry in the area there is also a high accident rate. The airport at Gallatin Field serves the public well in getting the injured and sick person to a metropolitan area via air ambulance for specialists attention.

### AIRCARRIER SERVICE AND ACTIVITY

While some communities large and small face the loss of air carrier service since airline deregulation, Gallatin Field has enjoyed ever increasing air service. The steadily increasing economy of the area contributes to the continued success of the airlines at Gallatin Field. Northwest Orient, Western, and Frontier Airlines serve Gallatin Field with an average of nine jet flights per day. Northwest is the oldest carrier being here



steadily for over 35 years, and Frontier over 15 years, Western was commissioned in Bozeman in 1982. Northwest serves the area with east/west service with Frontier and Western serving the north/south needs.

The Airport Authority at Gallatin Field has continually planned and followed the planning studies with a scheduled development and airport improvements program. The airport has provided the public with a new modern air terminal facility as well as modern fixed base facilities. The airport uses all of its entitlement monies along with any descretionary monies from the Airport Improvement Program of the Federal Aviation Administration making certain the airport facility will accomodate the demands put upon it by the carriers, the public and general aviation.

Table 1-3 displays a linear forecast of the emplanements for Gallatin Field.

#### Air Carrier Operations

In 1984 Gallatin Field airline boardings equated to some 22 enplanements for each departing airline flight. A total of 73,680 persons boarded 3,250 flights throughout the year. The airlines accounted for some 6,500 total operations in 1984. All air carrier operations are filed with Salt Lake Air Traffic Center and are instrument operations or movements.

Toward the end of 1984 Western Airlines and Frontier Airlines reduced their service slightly at Gallatin Field. Even though in 1985 the total airline operations may be less than in 1984, the boardings or enplanements are expected to enjoy a continual increase. This increase will in time cause additional flights by the carriers, but in the meantime the carriers will have greater load factors.

At some point in the future the flights may well be reduced at such time larger aircraft may be introduced into the system. Larger aircraft will probably not be introduced until such time the trade area can support non-stop service to points such as Minneapolis, Spokane, Denver and a west coast point.

This master plan update project has not attempted to "crystal ball" the possibility of gaining or losing any scheduled carrier. In the present world of deregulation and unpredictable national economic climate, such predictions would be foolish. Therefore the existing level of service is assumed to continue with wide bodied aircraft being introduced toward the end of the century.

To show two totally different concepts or senarios and how they might affect both the airport and the airlines, this study for comparative purposes only is listing senarios A and B. Senario A is continuing the 1984 level of service and Senario B shows the flights slightly increasing until year 2001 at which time the flights would decrease to 6 departures per day but each departure would be with a wide bodied jet holding over 200 passengers. Senario B shows that if in the year 2001 Gallatin Field ended up

with 6 departures per day with a wide bodied jet, the daily boardings would be 432 persons or 72 enplanements per flight. The year 2005 with the same service would indicate daily boardings of 487 or 81 enplanements per flight.

This statistical or academic exercise is for comparative purposes only and is somewhat unrealistic in that there will probably never be only one type of aircraft at any air carrier airport. Competing carriers always tend to introduce aircraft types for the service demanded or justified. For example the long haul bigger loads could call for a wide body aircraft while the shorter and lesser markets will be served with the smaller aircraft such as we have today at Gallatin Field.

As the public requires more frequent connecting flights to hub locations like Billings, it would not be unlikely at some point in time to see a commuter airline drop into Bozeman from an existing route. Such additional service would only compliment the existing three carriers in the event they do not see fit to improve on short haul connections to nearby hubs. The airport must be mindful of this possibility and continually monitor any planned improvements on the Terminal Building and adjacent facilities in order to accomodate the added carrier if and when it happens.

TABLE 1-3

GALLATIN FIELD - BOZEMAN, MONTANA  
Aircarrier Enplanement and Operational Forecast  
1985 - 2005

<u>Year</u>	<u>Enplanements</u>	<u>Total Operations</u>			
		<u>"Senario A"</u>	<u>"Senario B"</u>		
1984 (Actual)	73,680	6,500	23	6,500	23
1985 (Actual)	80,735	6,500	25	6,000	27
1986	83,000	6,500	26	6,000	28
1987	88,000	6,500	27	6,000	29
1988	93,000	6,500	29	6,000	31
1989	98,000	6,500	30	6,000	33
1990	103,000	6,500	32	6,000	34
1991	108,000	6,500	33	6,500	33
1992	113,000	6,500	35	6,500	35
1993	118,000	6,500	36	6,500	36
1994	123,000	6,500	38	6,500	38
1995	128,000	6,500	39	6,500	39
1996	133,000	6,500	41	7,000	31
1997	138,000	6,500	42	7,000	39
1998	143,000	6,500	44	7,000	41
1999	148,000	6,500	46	7,000	42
2000	153,000	6,500	47	7,000	44
2001	158,000	6,500	49	4,380	72
2002	163,000	6,500	50	4,380	74
2003	168,000	6,500	52	4,380	77
2004	173,000	6,500	53	4,380	79
2005	178,000	6,500	55	4,380	81

\* Indicates enplanements per departing flight

Note: Enplanement forecast is based on a simple linear extension

## REQUIRED AIRPORT IMPROVEMENTS

### Tie Downs:

The existing paved general aviation apron at Gallatin Field has 98 tie down positions. Approximately 38 of the 103 based aircraft are tied down either on this paved apron or on a free area provided on a turf surface near the private G.A. hangars on the southwest area of the airport. As more private hangars are provided the need will decrease for tie downs for locally based aircraft. There will however, always be a need for tie down space for a certain percentage of the based aircraft, both on pavement and turf. Therefore the paved apron becomes more important to the itinerants. Many of the itinerants are in multi-engine aircraft as well as business jets. These aircraft consume in some cases more than one position. The EBQ's also attempt to not locate the smaller aircraft in the jet blast areas, thus consuming a greater area per aircraft.

It is assumed the percentage of locally based aircraft tied outside will decrease from the present 37% to something more like 25%, depending on availability and rental costs for hangar space. Therefore the real impact or demand for tie down space will come from the itinerant traffic.

Gallatin Field is indeed fortunate to have adequate space available for paved apron expansion. The area southeast of the existing apron can be paved as the demand dictates. The airport will be forewarned for this need and peak day monitoring of the traffic will probably indicate the need for more paved apron in the era of the late 1980's.

Another area to consider for additional paved apron is the turfed area just north and west of Arlins Aircraft Service. The area presently is fenced away from the paved apron. The fence could easily be relocated to the west and an apron expansion could take place which might be assigned for the larger twin and visiting business jets, or aircraft being serviced.

Likewise, as the turf free tie down area is consumed by new hangar construction, other areas will have to be provided for turfed tie downs. Areas for consideration are the plots assigned to be future paved aprons just east of taxiway 'H'.

### HANGARS

This master plan mini update has designed the areas for new private 'T' hangar and multiple T hangar building development east of the airport entrance road. This area has the private hangar development now and the plan encourages such development to continue in conformance with the plans as layed out. Considerable thought and planning was given to the amount of space required. As planned out, the area would accomodate an

additional 147 aircraft in hangars. Even with the existing hangars holding 65 aircraft the additional 147 units would be able to handle all aircraft forecast to be based here plus an additional 21. It must be assumed the commercial FBO's on the field will provide indoor bulk storage for itinerants and areas have been designated on the plan for these facilities. These areas are east of the managers house near Eagle Aviation and between Sunbird's easterly building and Gallatin Flying Service on the front line.

The airport must continue to be careful to write private hangar leases in a manner which will preclude a commercial aviation business from developing out of a private hangar which is located in a non commercial area. Worse yet would be 'gypsy' operations happening out of the back of one's auto or truck and without a lease of any kind. Again this airport is fortunate to have the land available to assign for specific uses, either commercial or non-commercial.

#### OTHER AIRPORT BUILDING REQUIREMENTS

##### Fuel Farm

The FBO and airline combined fuel farm was established in the in-field area just west of the airport maintenance service shops. This facility and this location have worked well over the years and there are no apparent reasons to consider relocation.

##### Crash-Fire-Rescue (CFR)

The recently completed CFR building is located adjacent to the air carrier apron just east of the terminal complex. This modern, well designed facility will suffice the airports needs for several years to come. The building, as well as housing the crash-fire-rescue vehicles, has a ready room, equipment storage and training room.

##### Airport Services

As of this writing the Montana National Guard is planning to construct a new maintenance and service facility. The new location could again be on airport property. If this is the case, the existing National Guard OMS building and grounds should revert to the airport. It would seem prudent for the airport to expand into that area until the location would have a higher and greater value for a highway business related enterprise due to its location on the main access in to the airport. The area is fenced and the landscaping has been kept in fine condition by the airport staff for many years. The transition should not require any major expenditure other than additional utility costs once the move is made.



## National Guard

In the event the National Guard constructs a new maintenance facility on the airport, it would also like to be provided 10 acres which would have an Armory constructed upon it. The Armory would be used for certain public functions along with the normal Guard activities.

This plan update recognized the value to the Guard of being able to locate in an "out of the way" area, but at the same time be accessible to the public. Because of the vehicular testing of jeeps, trucks and tanks, the interior airport location where they now exist is no longer compatible to either the airport, Guard, or the motoring public. Therefore this study is recommending two locations for the airport authority to consider should the airport decide to provide land for new Guard facility. Site A; is that property located on the extreme northwest corner of airport property adjacent to the Dry Creek Highway. This location would be accessible from either the paved highway or the graveled Penwell Bridge Road. The giving up of the 10 acres or so would be of little detriment to the airport. Presently the property is rented to a nearby farmer for grazing purposes. This location is far enough from other airport activities to not conflict in any manner. It is close enough (1 1/2 miles) from the town of Belgrade to be readily accessible to the public. It could also be easily accessed from the Interstate Highway at such time the Jackrabbit Lane is extended to meet the Dry Creek road.

Site B; Is located on the East Airport Road just north of the low frequency radio tower at the intersection of Tower Road and Airport Road. This location has many of the same attributes but is more accessible to the Bozeman area. This property is not within the airport fence and is presently leased for dry land grain farming. Some of the property is unfarmed, but would require relocation of the radio tower fence.

## Other Government Buildings

At the present time there is no known application for additional governmental buildings on the airport. This airport was a candidate for the FAA Automated Flight Service Station, however the first announcement would indicate the local bid was too high. The area set aside for the AFSS could be used for a government or private office installation.

The possibility of a government provided air traffic control tower still lacks a commitment of any kind. The issue could change rapidly due to; a) a new national policy, b) air carrier pressure or c) airline union pressure. However all possibilities are unpredictable and therefore the best thing the airport might do is to continue to keep a suitable parcel of land available. The original master plan has a future tower location noted as being just east of the crash-fire-rescue building.

Industrial and commercial buildings on the airport will be addressed in the Land Use section of this plan.

#### Utilites

A ten inch water line serves the airport directly from the 500,000 gallon water tower which was jointly developed by the airport and the city of Belgrade. In 1984 the water line was extended to the new FBO on the easterly boundary of the general aviation area.

The airport sanitary sewer line connects into the city lagoon system located on the north boundary of the airport.

This plan recommends that 6" water line be looped through the general aviation hangar area and connected to a 10" extension of the main line to the southwest. Likewise the sanitary sewer might also be extended to the southwest. Refer to the Utilities Plan for detailed location of existing and future utility lines.

This plan strongly recommends that where possible all new installations on the airport be connected to the water and sewer system and that individual wells and especially septic systems be kept to a minimum for environmental reasons.

Eventually the airport water system main line should be looped back to the water tank to ensure proper and complete circulation of the water in the line. A loop would also allow for isolation of a line in the event of a leak but at the same time the remainder of the airport would not be out of water service. The loop recommended would probably be a 10" line running from the beacon tower junction southwest to the airport entrance at Highway No. 10, then under the access road to the water tower. It is suggested that the looping not take place until such time a major highway business occupies the corners at the airport turnoff. In this manner the business would pay the cost of the looping as opposed to the airport. Naturally this is a negotatable item and should the airport get a more favorable finance rate, a system of repayment could be set up for businesses connecting to amortize the debt service required.

Telephone, natural gas and electricity will continue to be provided as the demand dictates by the consumers. Adequate service lines are in place and no problems are anticipated with these utilities for the future.

#### Fencing and Security

Eventually the entire perimeter of the airport should be fenced with a security webbing fence. An excellent start has been made toward that goal and the 1985 construction program will include security fencing which will extend to nearly the half way point on the north side of the airport.

In time the general aviation hangar users may have to carry an electronic key card which will permit entry onto airport property. Presently a locked gate system is used for security.

The agricultural areas on the east and north perimeters of the airport will continue to need access to the airport lands they farm. A wide lockable gate system will suffice as their ingress and egress is not a daily requirement but seasonal.

#### Access and Auto Parking

The few roads which exist on Gallatin Field are heavily traveled by everyone and therefore require continual preventative maintenance. The main entrance road from Highway No. 10 should be resurfaced as soon as practical. One internal roadway serving the southwest G.A. Hangars should be paved as the budget allows but it is not a high priority item, it is as a graveled road a continuous upkeep item to contend with. The airport entrance road is in need of a better marking or lighting system. In time a low profile street light system should be provided out to Highway 10, in the meantime a good reflector system on the shoulders would be of some help.

The airport must monitor the auto parking needs from time to time and be prepared to add parking for the various areas as the demand dictates. The ready rental cars appear to congest the terminal entrance in peak times, especially when buses are parked on the curb. The airport might consider preparing a parking area just at the west end of the terminal and relocating 200 or 300 feet of fencing to provide a new load-unload area for either buses for the rental cars. This improvement would also necessitate a new set of doors in the west end of the terminal. Such improvement would not only help the flow of traffic within the building but with good signing would alleviate the present loading zones for customer automobiles.

Depending on the configuration the existing employee parking might also be incorporated into the new area.

#### Land Use

Land use considerations begin at the turnoff exit from Highway No. 10 onto the airport. This entrance, and exit with its rows of evergreen trees gives a very fine first or lasting impression of the airport and entire area. This plan feels the trees, with the exception of necessary thinning, should be protected at all cost.

Either side of the entrance to the airport on highway frontage has been reserved for highway business development. The most logical of businesses would be a motel. In time the airport can expect requests to lease the corners for that and other uses. Care must be given that only compatible uses be allowed in those areas. A motel would be compatible. These two corners could in time become one of the greater income generators to the airport.



Once steps are taken to provide sewer and water to the interior of the hangar area of the airport, one can expect the demand for those properties to be great. These areas would be ideal for businesses wherein the company owns and uses an aircraft. The company offices and the aircraft could be co-located with good street access along with access to internal G.A. taxiways J and N. A construction company would be a good example of a potential land leasee for this area. Care must be given when writing the lease making certain the leasee has no right to compete as a partial or full FBO, and most especially be precluded from dispensing its own fuel. A secondary aviation business could be allowed and even encouraged. An example of a secondary aviation business or a support business might be a propeller shop or an aircraft upholstery shop. Again full service FBO's belong on the front apron line. The G.A. area is designed primarily for aircraft storage and not to service volumes of aircraft. The "gypsy" operator is a continual concern at all public airports and providing adequate areas for all types of activities is the best assurance the rules and leases are not violated. More security lighting will soon be required in this area.

The land use map portion of this master plan update has areas coded to indicate the recommended land uses. Great care has been given in coordinating the forecast of based aircraft and the space required to accommodate those aircraft for the 20 years or more. The remaining properties and their future uses is the primary reason for this mini-update. The airport can be assured that aviation has been allocated adequate space to expand. Nevertheless, it is still wise for the airport to continually monitor the growth trends.

The entire infield area west of the access road and southeast of the terminal might well best serve the area as a location for offices or even a governmental agency headquarters. The area between Runway 3/21 and the access road must be all aircraft storage. The area east of Runway 3/21 is still an unknown potential for aviation related industry. The airport can expect to receive applications to use that expanse of property for non-aviation uses and public hearings may be required at the time.

Lands have been recently acquired in the area of noise contour level 65 dba on the south easterly portion of the airport. This plan recommends no buildings in the clear zone itself. Accepted uses for the other lands (which have had mobile homes removed) would be agricultural pasture and open space.

gf#5-mastpln



# MORRISON-MAIERLE, INC.

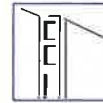
CONSULTING ENGINEERS

STRUCTURAL

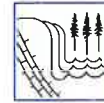
WATER RESOURCES

ENVIRONMENTAL

TRANSPORTATION



ENGINEERS



EARTH SCIENTISTS



PLANNERS

January 20, 1986

Ted Mathis  
Gallatin Field Airport  
P.O. Box 146  
Bozeman, Montana 59715

RE: Gallatin Field Mini-Update  
FAA Case No. 85ANM/H-10/NRA

Dear Ted,

We are herewith responding to the FAA letter to you from Susan Alexander dated July 10, 1985. Each concern has been addressed and revisions made in the plan as we deemed appropriate.

Regarding the land use designation issues, we felt it prudent to consult with Mr. Joe Baker, City-County Planning Director at Belgrade. We did this to assure ourselves that we were not proposing an incompatible use of any lands which border his jurisdictional area. Mr. Baker was very helpful in the designation of non aviation use properties of the airport, especially as it concerns highway businesses, labeled by him as B-2. As you will note, we have added to the text explaining allowable uses for given labeled areas.

Upon consultation with the Helena ADO FAA office, it has become very clear that any lands purchased with their financial assistance, for the purpose of clear zones, approach surfaces and noise contours, should not have any major congregation of persons. Therefore all of our deliberations in trying to find a logical use for the old Thomson properties southeast of the airport are nor nought. These properties best remain agriculture-open space.

Certain generalizations had to be made in the forcast section due to the lack of documentable statistics for operations. Obviously we did down grade the operations per based aircraft simply due to the lesser amount of general aviation now as the result of higher fuel costs and more difficult economic times. This is explained in the text.

The update is now completed but should be an on going accumulation of statistical revisions as time goes by. It is always difficult to do only a mini-update with limited dollars and man hours because once you are into the project one bit of information leads to the desire to explore an associated issue, but the reduced scope of work doesn't allow for it still keeping within the assigned budget.

We apologize for the delay in completing this work. After you have reviewed the revised information we will submit it to FAA for their comments. We may want to sit down with them in doing this.

On behalf of Jim Monger and myself we want to thank the Gallatin Airport Authority for again allowing us to update the Airport Master Plan.

Sincerely,  
MORRISON-MAIERLE, INC.



John Schunke, P.E.  
Bozeman Branch Manager

cc: Jim Monger

JS/da  
gf#5-1trted

RESPONSE TO FAA COMMENTS  
SUBMITTED JULY 9, 1985

1. a.b.

Please refer to the revision and expansion of the "Land Use" section on pages 14, 15 and 16 (new) in the main report and also to answer 5.a. of this response sheet.

c. Corrected

d.

Revised; that portion of the clear zone is now noted as Open Space/Agricultural

2. a.b.

The concerns with this area were caused by misleading labeling on our part. The labels have now been revised to indicate that the entire area is general aviation. The intent of the original labeling was to show that all full service FBO's belong on the front apron line and not in this area. The narrative in the main report explains it properly.

c.d.

The gravel road will be paved in 1986. The usage or restrictions to road usage is a management matter and will no longer be a problem with the installation of the key-card gate system planned for FY86. The plan sheets now note the four locations in the general aviation areas which are to receive the key-card gates.

e. Perimeter security fence is again in the AIP FY86 program

f. Shown on ALP

3. a.b.

As stated previously, the 4 key-card gates will correct the access abuse by those not requiring access onto the active areas. It would not be practical or cost effective to alter the layout of the T hangars just to provide for their butting up against the fence. Where it is practical this is done, but as the plan shows, the taxiway system is designed for safety, simplicity and to take advantage of natural terrain features. In time it might be desirable to add 1 or 2 more key card gates to the southwest expansion areas, but certainly not one between each hangar unit.

4. a.

We revised the operational forecast by using the FAA Terminal Area Forecast as the starting base for 1984. The factor of operations created per aircraft is now 373 annually. Even though it would be difficult to defend the T.A.F., it appears to be one of the best ones produced lately, even though it may be pessimistic for the future if our present day aviation economy and activity ever picks up.

b. Statement removed

c. As in answer a. above, the T.A.F. was used for the operational starting base of 1984. The previous difference was 34%

d. We have noted time frames on the plan

e.

The National Guard is soon to move to a new facility at a new location. This facility is programmed to revert to airport ownership. This general area including the shops and fuel farm are now labeled "Airport Support".

f. Revised

5. a.

Please refer to the revised land use section, old pages 14 and 15. This section has been expanded as the result of our consultation with Mr. Joe Baker, the City-County Planning Director at Belgrade. We have incorporated his accepted terminology for those non-aviation areas leaving common boundaries with his jurisdictional areas.

b. Done

Highway Business - B2

Businesses to be located in an area to never be required for aviation facilities. Highway business will allow for the establishment of commercial service facilities to accommodate primarily the aviation traveler. These businesses could include but not be limited to, motels, hotels, convention centers and gift shops.

## Open Space/Agriculture

Permits any recreational use which results in a low concentration of people. Any accessory structures are limited to the non-aviation perimeter. Accepted uses could include, jogging and bike paths, golf courses, parks and picnic areas but no bleacher or grandstand activity and no lighted activity. It is recognized that the designation of these "Recreational" areas can be of great assistance to the airports assurance that our open space won't in time evolve into an incompatible use. Specifically the area between the City of Belgrade and the airport terminal is of greatest concern and will be greatly protected by this designation.

## Permitted Uses

The specific areas as delineated by coding on the plan sheets are by definition as follows:

### Airport Support:

Airport shops and storage, fuel farms, rental car service and storage, equipment storage and any other activity associated directly with maintaining physical plants and other facilities on the airport.

### General Aviation:

Aircraft storage hangars, single units and multiple units; aviation support facilities as in, prop shops, upholstery, electronics, or other aviation related specialities; turfed tie down areas; office hagar combination but specifically no fixed base operations as they are allowed only on front apron line, and no facility leased lands are allowed to dispense fuel;

### Commercial Aviation:

Fixed base operations who provide fueling, charters, custom flying, mechanical servicing, airtaxi, flight instruction, air ambulance, aerial application, aircraft storage, sell aircraft accessories, and provide other service that go along with being a full service fixed base operation or airline, scheduled or unscheduled.

Along with Section 509 (b) (5) of the Airport and Airway Improvement Act.

Government Offices, Professional Offices, Light Industry - High Tech

This area is self explanatory