



City of Los Banos

At the Crossroads of California

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AGENDA

AIRPORT ADVISORY COMMISSION MEETING

CITY HALL COUNCIL CHAMBERS
520 J Street
Los Banos, California

SEPTEMBER 20, 2016

If you require special assistance to attend or participate in this meeting, please call the City Clerk's Office @ (209) 827-7000 at least 48 hours prior to the meeting.

The City of Los Banos complies with the Americans with Disabilities Act (ADA) of 1990.

Si requiere asistencia especial para atender o participar en esta junta por favor llame a la oficina de la Secretaria de la ciudad al (209) 827-7000 a lo menos de 48 horas previas de la junta.

La Ciudad de Los Banos cumple con la Acta de Americanos con Deshabilidad (ADA) de 1990.

Any writings or documents provided to a majority of the Airport Advisory Commission regarding any item on this agenda will be made available for public inspection at the meeting and in the City Clerk's office located at City Hall, 520 J Street, Los Banos, California during normal business hours. In addition, such writings and documents may be posted on the City's website at www.losbanos.org.

Cualquier escritura o los documentos proporcionaron a una mayoría de la Airport Advisory Commission con respecto a cualquier artículo en este orden del día será hecho disponible para la inspección pública en la reunión y en la oficina del City Clerk del City Hall, 520 J Street, Los Banos, California durante horas de oficina normales. Además, tales escrituras y los documentos pueden ser anunciados en el website de la Ciudad en www.losbanos.org.

1. CALL TO ORDER. **5:00 PM**
2. PLEDGE OF ALLEGIANCE.
3. ROLL CALL:

Reed ____, Renshaw ____, Stichel ____, Wilber ____, Anderson ____
4. CONSIDERATION OF APPROVAL OF AGENDA.

Recommendation: Approve the agenda as submitted.
5. CONSIDERATION OF APPROVAL OF THE ACTION MINUTES FOR THE REGULAR MEETING OF AUGUST 16, 2016.

Recommendation: Approve the minutes as submitted.

6. PUBLIC FORUM. (Members of the public may address the Airport Advisory Commission on any item of public interest that is within the jurisdiction of the Airport Advisory Commission; includes agenda and non-agenda items. No action will be taken on non-agenda items. Speakers are limited to a five (5) minute presentation. Detailed guidelines are posted on the Council Chamber informational table).

7. STATUS OF INDUSTRIAL PARK PROJECT/RUNWAY RELOCATION

Recommendation: Informational item only, no action to be taken.

8. AIRPORT 2015/2016 ANNUAL FUEL SALES PROFILE REVIEW.

Recommendation: Informational item only, no action to be taken.

9. AIRPORT 2016/2017 REVENUE/EXPENDITURE UPDATE.

Recommendation: Informational item only, no action to be taken.

10. AWOS System Overview.

Recommendation: Informational item only, no action to be taken.

11. AIRPORT FACILITY MAINTENANCE REPORT.

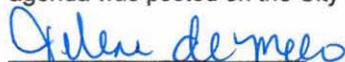
12. PUBLIC WORKS DIRECTOR/CITY ENGINEER REPORT.

13. COMMISSIONER REPORTS.

- A. Dennis Reed
- B. Jim Renshaw
- C. Annette Stichel
- D. Alan Wilber
- E. Dave Anderson

14. ADJOURNMENT.

I hereby certify under penalty of perjury under the laws of the State of California, that the foregoing agenda was posted on the City Hall bulletin board not less than 72 hours prior to the meeting.


Jelene de Melo, Secretary

Dated this 14th day of September 2016

**CITY OF LOS BANOS
AIRPORT ADVISORY COMMISSION MEETING MINUTES
AUGUST 16, 2016**

ACTION MINUTES – These minutes are prepared to depict action taken for agenda items presented to the Airport Advisory Commission.

CALL TO ORDER: Chairperson Anderson called the Airport Advisory Commission Meeting to order at 5:02 p.m.

PLEDGE OF ALLEGIANCE: Commissioner Reed led the pledge of allegiance.

ROLL CALL – MEMBERS OF THE AIRPORT ADVISORY COMMISSION PRESENT:
Reed, Wilber, Anderson; Renshaw excused, Stichel absent.

STAFF MEMBERS PRESENT: Public Works Director/City Engineer Fachin, Parks & Recreation Operations Manager Cardoza, Administrative Coordinator de Melo.

CONSIDERATION OF APPROVAL OF AGENDA: Motion by Wilber, seconded by Reed to approve the agenda as submitted. The motion carried by the affirmative vote of all Airport Advisory Commission Members present; Renshaw excused, Stichel absent.

CONSIDERATION OF APPROVAL OF THE ACTION MINUTES FOR THE REGULAR MEETING OF JULY 19, 2016: Motion by Wilber, seconded by Reed to approve the minutes as submitted. The motion carried by the affirmative vote of all Airport Advisory Commission Members present; Renshaw excused, Stichel absent.

PUBLIC FORUM: MEMBERS OF THE PUBLIC MAY ADDRESS THE COUNCIL ON ANY ITEM OF PUBLIC INTEREST THAT IS WITHIN THE JURISDICTION OF THE CITY; INCLUDES AGENDA AND NON-AGENDA ITEMS. NO ACTION WILL BE TAKEN ON NON-AGENDA ITEMS. SPEAKERS ARE LIMITED TO A FIVE (5) MINUTE PRESENTATION. DETAILED GUIDELINES ARE POSTED ON THE COUNCIL CHAMBER INFORMATIONAL TABLE. No one came forward to speak and the public forum was closed.

STATUS OF INDUSTRIAL PARK PROJECT/RUNWAY RELOCATION. Director/City Engineer Fachin reported the status has not changed since the last Commission Meeting. The water study is under revision to provide a few more options. We are waiting for that to come back to staff for review. The wind data continues to be sent to Bob Wadell for review. We are currently waiting for these studies to move forward, which takes time.

AIRPORT 2015/2016 ANNUAL FUEL SALES PROFILE REVIEW. Operations Manager Cardoza reported the current fuel prices are \$4.259 for 100LL. The JetA is \$3.909. We are #3 least expensive for our fuel prices within a 50 mile radius. We have sold slightly less fuel in July 2016, than in July 2015. Our prices are as competitive as

they have ever been. We hope to see an increase in sales soon. Chairperson Anderson commented that maybe fuel sales are down because car fuel sales are so low, perhaps more people are traveling by vehicle instead of by air.

AIRPORT 2015/2016 REVENUE/EXPENDITURE UPDATE. Director/City Engineer Fachin stated we are one month into the new budget. Our expenditures are at \$33,000, which includes yearly insurance payments deducted at the beginning of the fiscal year and filling up our gas tanks. Our revenues are at \$14,600, which will increase once we sell the fuel in our tanks.

AIRPORT FACILITY MAINTENANCE REPORT. Operations Manager Cardoza reported there is ongoing mowing of the weeds at Airport. Thanks to the Streets Division for overlaying the entrance to the Airport. They did a great job, and it's a wonderful improvement to the Airport. We will be replacing the sump pumps and adding base rock to the taxiway, per FAA's last inspection report. Operations Manager Cardoza provided pictures to the Commission of the new cover for the fast pay machine. The cost was about \$700, and was well worth it. It will protect the screen for many years. Commissioner Reed asked the status of CalStar's decision to move to our airport. Operations Manager Cardoza stated that CalStar would make their decision in 60-90 days, and we have not heard their decision as of yet.

PUBLIC WORKS DIRECTOR/CITY ENGINEER REPORT. Director/City Engineer Director Fachin stated that every year we receive a grant of \$150,000. This year we will not be giving it to another airport. We will be using it update our overlay design. We will begin that process with Engineer Bob Wadell in February or March of 2017.

COMMISSION MEMBER REPORTS.

REED: No report.

WILBER: No report.

STICHEL: Absent.

RENSHAW: Excused.

ANDERSON: Keep up the good work. Interested in the AWOS system and what all the instruments are and how it works. Asked Operations Manager Cardoza to get that information for the next meeting.

ADJOURNMENT: The meeting was adjourned at the hour of 5:17pm.

APPROVED:

Dave Anderson, Chairperson

ATTEST:

Jelene de Melo, Secretary



City of
Los Banos
At the Crossroads of California

Agenda Staff Report

TO: Airport Advisory Commission

FROM: Mark Fachin, P.E., Public Works Director/City Engineer

DATE: September 20, 2016

SUBJECT: Status of Industrial Park Project/Runway Relocation

TYPE OF REPORT: Informational Item

Recommendation:

Informational item only, no action to be taken.

Discussion:

Update on the status of the Industrial Park Project/Runway Relocation.



City of
Los Banos
At the Crossroads of California

Agenda Staff Report

TO: Airport Advisory Commission

FROM: Paul Cardoza, Parks & Recreation Operations Manager

DATE: September 20, 2016

SUBJECT: Los Banos Airport 2015/2016 Annual Fuel Sales Profile Review

TYPE OF REPORT: Informational Item

Recommendation:

Informational item only, no action to be taken.

Discussion:

Attached is the 2016 Annual Fuel Sales Profile for the Airport as of September 1, 2016. Page 1 of the attachment shows the complete summary for both 100LL and Jet A sales. Page 2 shows the breakdown for 100LL fuel, and Page 3 shows the breakdown for Jet A fuel.

Also attached is the 2015 Annual Fuel Sales Profile to compare with fuel sales for 2016.

Attachments:

Airport 2015/2016 Annual Fuel Sales Profile

Annual Sales Profile

Start date: 1/1/2016
End date: 12/31/2016

Site: Los Banos Airport

Inventory History — Complete Summary

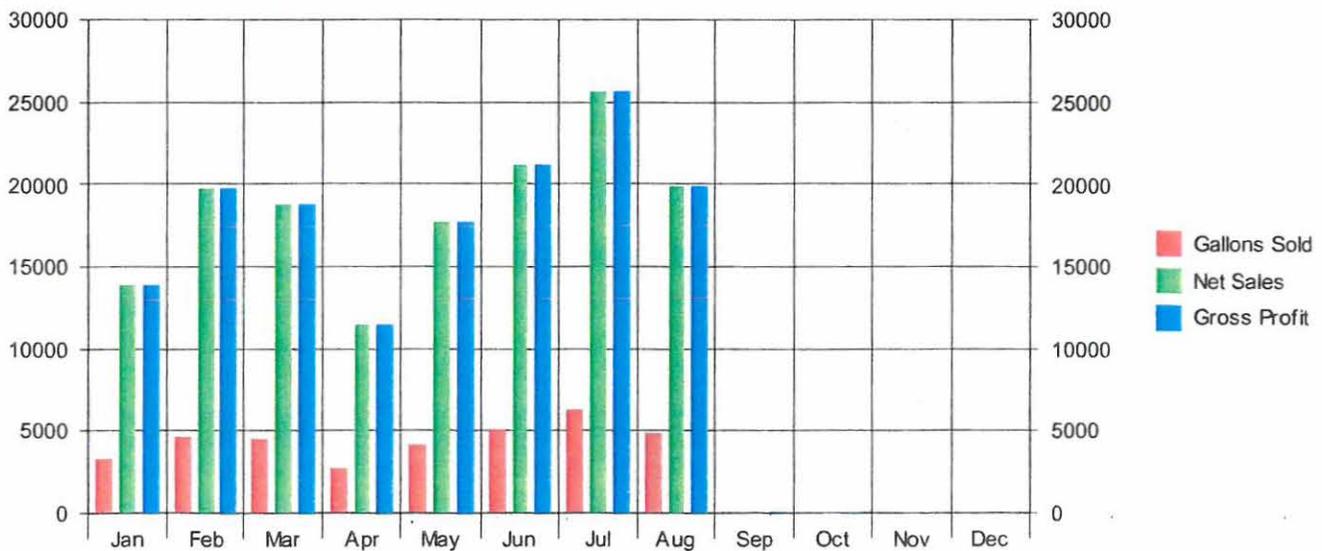
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Beg Inventory	12,436.560	15,635.270	10,934.930	12,882.000	16,446.860	12,290.930	11,521.920	17,767.520	12,904.040	12,892.040	12,892.040	12,892.040	
Gal Purchased	6,513.000	0.000	6,523.000	6,284.000	0.000	4,361.000	12,550.000	0.000	0.000	0.000	0.000	0.000	36,231.000
Adjustments	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gallons Sold	3,314.290	4,700.340	4,575.930	2,719.140	4,155.930	5,130.010	6,304.400	4,863.480	12.000	0.000	0.000	0.000	35,775.520
End Inventory	15,635.270	10,934.930	12,882.000	16,446.860	12,290.930	11,521.920	17,767.520	12,904.040	12,892.040	12,892.040	12,892.040	12,892.040	

Financial History — Complete Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Net Sales	13,950.030	19,764.790	18,912.290	11,550.190	17,747.550	21,264.550	25,765.590	19,888.120	51.110	0.000	0.000	0.000	148,894.200
Cost of Goods	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gross Profit	13,950.030	19,764.790	18,912.290	11,550.190	17,747.550	21,264.550	25,765.590	19,888.120	51.110	0.000	0.000	0.000	148,894.200

Monthly Statistics — Complete Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Avg Sale \$	236.441	174.910	245.614	160.419	151.689	180.208	192.281	176.001	51.110	0.000	0.000	0.000	174.297
Avg Sale Vol	56.174	41.596	59.428	37.766	35.521	43.475	47.048	43.040	12.000	0.000	0.000	0.000	41.783
Avg PPU Vol	4.209	4.205	4.133	4.248	4.270	4.145	4.087	4.089	4.259	0.000	0.000	0.000	4.183
Avg CPU Vol	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Avg Margin/Unit	4.209	4.205	4.133	4.248	4.270	4.145	4.087	4.089	4.259	0.000	0.000	0.000	4.183
Avg Margin/Sale	236.441	174.910	245.614	160.419	151.689	180.208	192.281	176.001	51.110	0.000	0.000	0.000	174.297
% of Vol YTD	9.264	13.138	12.791	7.601	11.617	14.339	17.622	13.594	0.034	0.000	0.000	0.000	100.000
% of Profit YTD	9.369	13.274	12.702	7.757	11.920	14.282	17.305	13.357	0.034	0.000	0.000	0.000	100.000
# of Sales	59.000	113.000	77.000	72.000	117.000	118.000	134.000	113.000	1.000	0.000	0.000	0.000	804.000



Annual Sales Profile

Start date: 1/1/2016
End date: 12/31/2016

Site: Los Banos Airport

Inventory History — 100 II

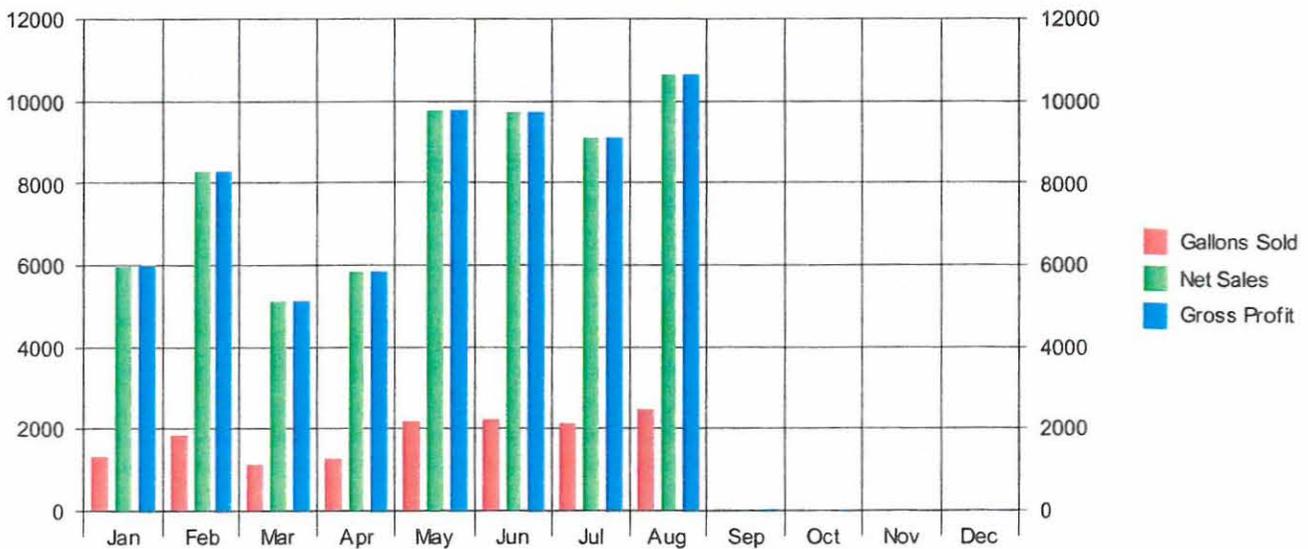
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Beg Inventory	8,327.109	7,001.049	5,158.869	4,024.149	9,009.779	6,836.959	4,571.439	8,796.999	6,292.119	6,280.119	6,280.119	6,280.119	
Gal Purchased	0.000	0.000	0.000	6,284.000	0.000	0.000	6,371.000	0.000	0.000	0.000	0.000	0.000	12,655.000
Adjustments	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gallons Sold	1,326.060	1,842.180	1,134.720	1,298.370	2,172.820	2,265.520	2,145.440	2,504.880	12.000	0.000	0.000	0.000	14,701.990
End Inventory	7,001.049	5,158.869	4,024.149	9,009.779	6,836.959	4,571.439	8,796.999	6,292.119	6,280.119	6,280.119	6,280.119	6,280.119	

Financial History — 100 II

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Net Sales	5,979.220	8,306.430	5,116.490	5,854.340	9,797.260	9,780.810	9,137.470	10,668.350	51.110	0.000	0.000	0.000	64,691.480
Cost of Goods	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gross Profit	5,979.220	8,306.430	5,116.490	5,854.340	9,797.260	9,780.810	9,137.470	10,668.350	51.110	0.000	0.000	0.000	64,691.480

Monthly Statistics — 100 II

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Avg Sale \$	149.481	106.493	106.594	108.414	107.662	113.730	110.090	138.550	51.110	0.000	0.000	0.000	110.236
Avg Sale Vol	33.152	23.618	23.640	24.044	23.877	26.343	25.849	32.531	12.000	0.000	0.000	0.000	25.006
Avg PPU Vol	4.509	4.509	4.509	4.509	4.509	4.317	4.259	4.259	4.259	0.000	0.000	0.000	4.404
Avg CPU Vol	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Avg Margin/Unit	4.509	4.509	4.509	4.509	4.509	4.317	4.259	4.259	4.259	0.000	0.000	0.000	4.404
Avg Margin/Sale	149.481	106.493	106.594	108.414	107.662	113.730	110.090	138.550	51.110	0.000	0.000	0.000	110.236
% of Vol YTD	9.020	12.530	7.718	8.831	14.779	15.410	14.593	17.038	0.082	0.000	0.000	0.000	100.000
% of Profit YTD	9.243	12.840	7.909	9.050	15.145	15.119	14.125	16.491	0.079	0.000	0.000	0.000	100.000
# of Sales	40.000	78.000	48.000	54.000	91.000	86.000	83.000	77.000	1.000	0.000	0.000	0.000	558.000



Annual Sales Profile

Start date: 1/1/2016
End date: 12/31/2016

Site: Los Banos Airport

Inventory History — JET-A

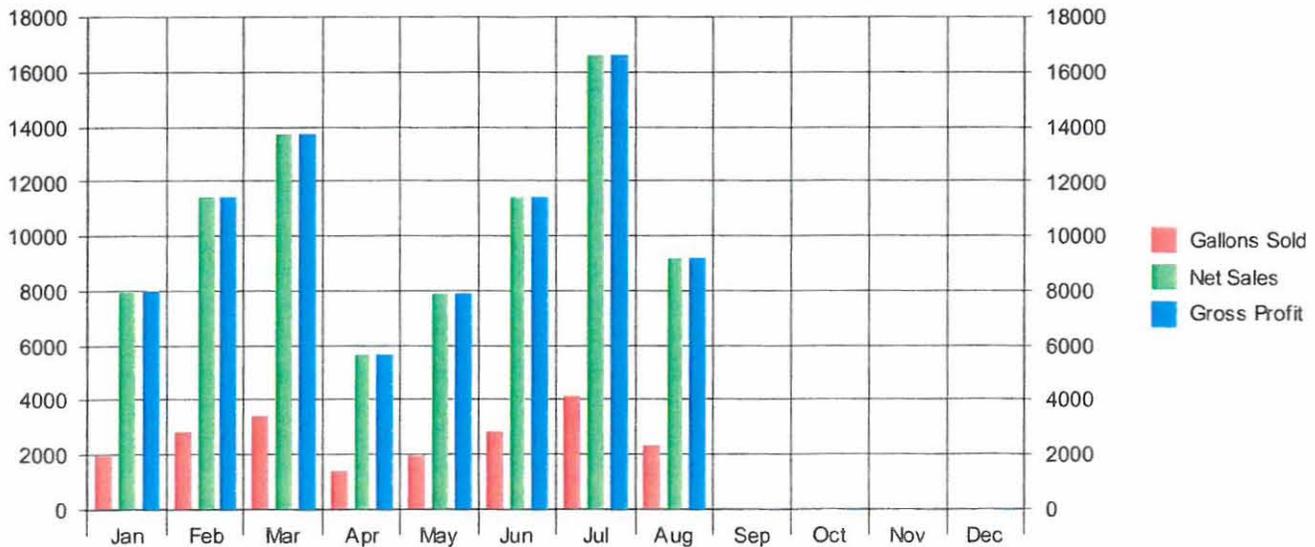
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Beg Inventory	4,109.453	8,634.223	5,776.063	8,857.854	7,437.083	5,453.973	6,950.483	8,970.523	6,611.923	6,611.923	6,611.923	6,611.923	
Gal Purchased	6,513.000	0.000	6,523.000	0.000	0.000	4,361.000	6,179.000	0.000	0.000	0.000	0.000	0.000	23,576.000
Adjustments	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gallons Sold	1,988.230	2,858.160	3,441.210	1,420.770	1,983.110	2,864.490	4,158.960	2,358.600	0.000	0.000	0.000	0.000	21,073.530
End Inventory	8,634.223	5,776.063	8,857.854	7,437.083	5,453.973	6,950.483	8,970.523	6,611.923	6,611.923	6,611.923	6,611.923	6,611.923	

Financial History — JET-A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Net Sales	7,970.810	11,458.360	13,795.800	5,695.850	7,950.290	11,483.740	16,628.120	9,219.770	0.000	0.000	0.000	0.000	84,202.740
Cost of Goods	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gross Profit	7,970.810	11,458.360	13,795.800	5,695.850	7,950.290	11,483.740	16,628.120	9,219.770	0.000	0.000	0.000	0.000	84,202.740

Monthly Statistics — JET-A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Avg Sale \$	419.516	327.382	475.717	316.436	305.780	358.867	326.042	256.105	0.000	0.000	0.000	0.000	348.231
Avg Sale Vol	104.644	81.662	118.662	78.932	76.273	89.515	81.548	65.517	0.000	0.000	0.000	0.000	87.094
Avg PPU Vol	4.009	4.009	4.009	4.009	4.009	4.009	3.998	3.909	0.000	0.000	0.000	0.000	3.995
Avg CPU Vol	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Avg Margin/Unit	4.009	4.009	4.009	4.009	4.009	4.009	3.998	3.909	0.000	0.000	0.000	0.000	3.995
Avg Margin/Sale	419.516	327.382	475.717	316.436	305.780	358.867	326.042	256.105	0.000	0.000	0.000	0.000	348.231
% of Vol YTD	9.435	13.563	16.330	6.742	9.410	13.593	19.735	11.192	0.000	0.000	0.000	0.000	100.000
% of Profit YTD	9.466	13.608	16.384	6.764	9.442	13.638	19.748	10.949	0.000	0.000	0.000	0.000	100.000
# of Sales	19.000	35.000	29.000	18.000	26.000	32.000	51.000	36.000	0.000	0.000	0.000	0.000	246.000



Annual Sales Profile

Start date: 1/1/2015
End date: 12/31/2015

Site: Los Banos Airport

Inventory History — Complete Summary

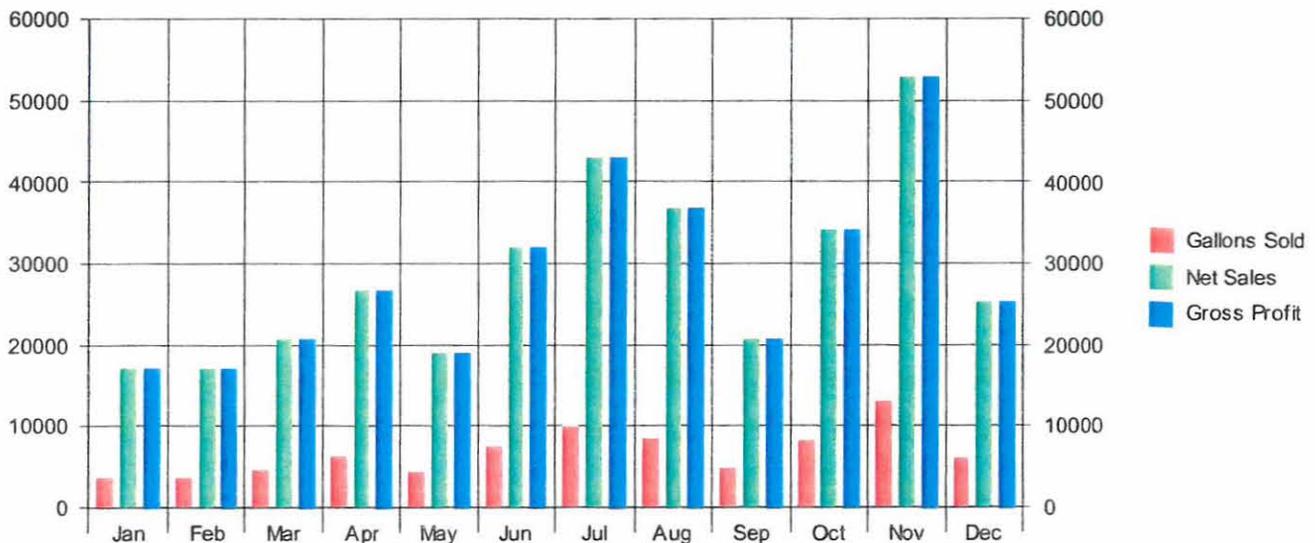
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Beg Inventory	16,502.880	12,688.630	14,621.880	16,235.160	16,430.530	11,930.210	10,410.740	12,650.380	10,940.580	12,558.530	9,746.325	18,637.570	
Gal Purchased	0.000	5,714.000	6,421.000	6,606.000	0.000	5,981.000	12,249.000	6,769.000	6,557.000	5,473.000	21,948.000	0.000	77,718.000
Adjustments	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gallons Sold	3,814.250	3,780.740	4,807.730	6,410.630	4,500.320	7,500.470	10,009.350	8,478.810	4,939.050	8,285.200	13,056.750	6,201.010	81,784.310
End Inventory	12,688.630	14,621.880	16,235.160	16,430.530	11,930.210	10,410.740	12,650.380	10,940.580	12,558.530	9,746.325	18,637.570	12,436.570	

Financial History — Complete Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Net Sales	17,350.990	17,140.290	20,737.850	26,823.850	19,199.250	32,057.130	43,242.300	37,100.020	20,791.940	34,430.930	53,004.340	25,461.520	347,340.400
Cost of Goods	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gross Profit	17,350.990	17,140.290	20,737.850	26,823.850	19,199.250	32,057.130	43,242.300	37,100.020	20,791.940	34,430.930	53,004.340	25,461.520	347,340.400

Monthly Statistics — Complete Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Avg Sale \$	237.685	300.707	180.329	192.977	169.905	174.224	210.938	236.306	174.722	264.853	486.278	335.020	246.995
Avg Sale Vol	52.250	66.329	41.806	46.120	39.826	40.763	48.826	54.005	41.505	63.732	119.787	81.592	58.045
Avg PPU Vol	4.549	4.534	4.313	4.184	4.266	4.274	4.320	4.376	4.210	4.156	4.060	4.106	4.279
Avg CPU Vol	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Avg Margin/Unit	4.549	4.534	4.313	4.184	4.266	4.274	4.320	4.376	4.210	4.156	4.060	4.106	4.279
Avg Margin/Sale	237.685	300.707	180.329	192.977	169.905	174.224	210.938	236.306	174.722	264.853	486.278	335.020	246.995
% of Vol YTD	4.664	4.623	5.879	7.838	5.503	9.171	12.239	10.367	6.039	10.131	15.965	7.582	100.000
% of Profit YTD	4.995	4.935	5.970	7.723	5.528	9.229	12.450	10.681	5.986	9.913	15.260	7.330	100.000
# of Sales	73.000	57.000	115.000	139.000	113.000	184.000	205.000	157.000	119.000	130.000	109.000	76.000	1,477.000



Annual Sales Profile

Start date: 1/1/2015 Site: Los Banos Airport
 End date: 12/31/2015

Inventory History — 100 II

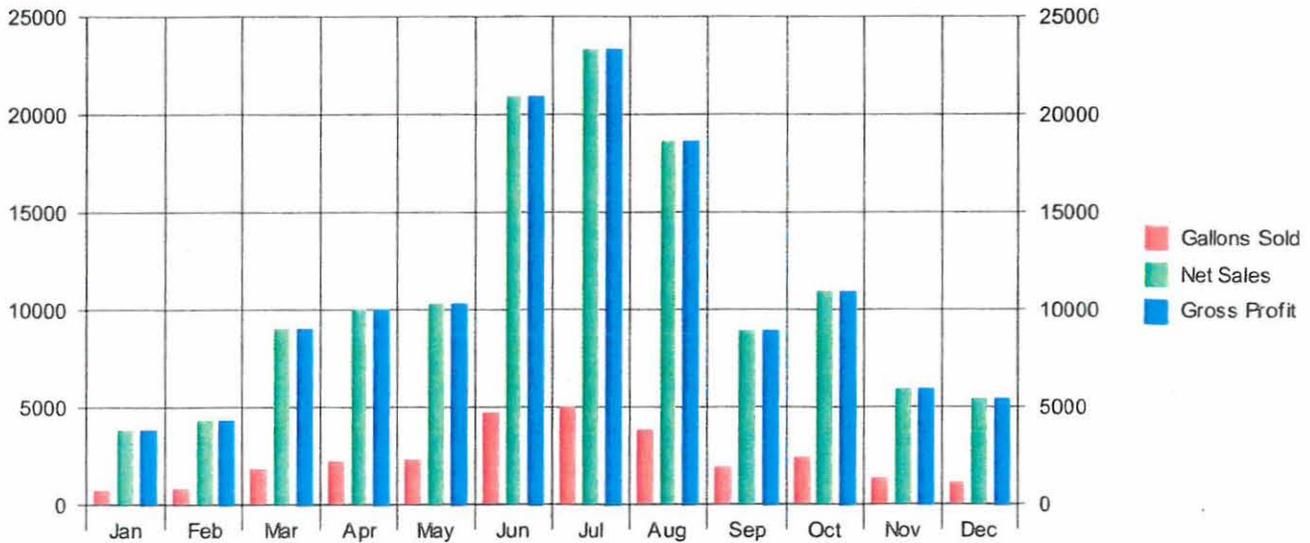
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Beg Inventory	6,503.609	5,751.529	4,885.009	9,406.439	7,159.100	4,844.179	6,081.299	6,982.409	3,096.859	7,671.299	5,240.119	9,530.399	
Gal Purchased	0.000	0.000	6,421.000	0.000	0.000	5,981.000	5,965.000	0.000	6,557.000	0.000	5,610.000	0.000	30,534.000
Adjustments	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gallons Sold	752.080	866.520	1,899.570	2,247.340	2,314.920	4,743.880	5,063.890	3,885.550	1,982.560	2,431.180	1,319.720	1,203.290	28,710.500
End Inventory	5,751.529	4,885.009	9,406.439	7,159.100	4,844.179	6,081.299	6,982.409	3,096.859	7,671.299	5,240.119	9,530.399	8,327.109	

Financial History — 100 II

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Net Sales	3,849.880	4,369.900	9,079.040	10,133.220	10,437.980	21,005.930	23,415.970	18,685.630	8,939.370	10,962.210	5,950.600	5,425.660	132,255.400
Cost of Goods	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gross Profit	3,849.880	4,369.900	9,079.040	10,133.220	10,437.980	21,005.930	23,415.970	18,685.630	8,939.370	10,962.210	5,950.600	5,425.660	132,255.400

Monthly Statistics — 100 II

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Y.T.D
Avg Sale \$	109.997	198.632	109.386	102.356	125.759	132.949	151.071	168.339	98.235	119.155	99.177	120.570	127.969
Avg Sale Vol	21.488	39.387	22.886	22.700	27.891	30.025	32.670	35.005	21.786	26.426	21.995	26.740	27.417
Avg PPU Vol	5.119	5.043	4.780	4.509	4.509	4.428	4.624	4.809	4.509	4.509	4.509	4.509	4.655
Avg CPU Vol	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Avg Margin/Unit	5.119	5.043	4.780	4.509	4.509	4.428	4.624	4.809	4.509	4.509	4.509	4.509	4.655
Avg Margin/Sale	109.997	198.632	109.386	102.356	125.759	132.949	151.071	168.339	98.235	119.155	99.177	120.570	127.969
% of Vol YTD	2.620	3.018	6.616	7.828	8.063	16.523	17.638	13.534	6.905	8.468	4.597	4.191	100.000
% of Profit YTD	2.911	3.304	6.865	7.662	7.892	15.883	17.705	14.128	6.759	8.289	4.499	4.102	100.000
# of Sales	35.000	22.000	83.000	99.000	83.000	158.000	155.000	111.000	91.000	92.000	60.000	45.000	1,034.000





City of
Los Banos
At the Crossroads of California

Agenda Staff Report

TO: Airport Advisory Commission

FROM: Mark Fachin, P.E., Public Works Director/City Engineer

DATE: September 20, 2016

SUBJECT: Airport 2016/2017 Revenue/Expenditure Update

TYPE OF REPORT: Informational Item

Recommendation:

Informational item only, no action to be taken.

Discussion:

Attached is the 2015/2016 Revenue/Expenditure update for the Airport as of September 9, 2016. Please note, staff time is not reflected in this report.

Attachments:

Airport 2016/2017 Revenue/Expenditure Update

General Ledger
Expenses vs. Budget



City of
Los Banos
At the Crossroads of California

User: ktomas
Printed: 09/09/16 08:27:33
Period 01 - 03
Fiscal Year 2017

Account Number	Description	Budget	Month to Date	Year To Date	Available	% Expended
505	AIRPORT FUND					
435	Airport					
	Personnel Services					
505-435-100-102	Part Time	10,500.00	1,330.00	1,330.00	9,170.00	12.67
505-435-100-120	Benefits	<u>1,279.00</u>	<u>101.75</u>	<u>101.75</u>	<u>1,177.25</u>	<u>7.96</u>
	Personnel Services	11,779.00	1,431.75	1,431.75	10,347.25	12.16
	Supplies & Services					
505-435-100-201	Ground Maintenance	5,000.00	0.00	0.00	5,000.00	0.00
505-435-100-205	Facility Maintenance	10,000.00	1,158.14	1,158.14	8,841.86	11.58
505-435-100-231	Professional Services	10,000.00	0.00	0.00	10,000.00	0.00
505-435-100-238	Technical Services	7,600.00	38.00	38.00	7,562.00	0.50
505-435-100-250	Insurance	11,898.00	11,015.56	11,015.56	882.44	92.58
505-435-100-252	Communications	900.00	68.31	68.31	831.69	7.59
505-435-100-260	Office Supplies	900.00	45.77	45.77	696.91	5.09
505-435-100-264	Electricity & Gas	20,000.00	3,076.23	3,076.23	16,923.77	15.38
505-435-100-265	Gasoline & Oil	<u>200,000.00</u>	<u>37,563.36</u>	<u>37,563.36</u>	<u>162,436.64</u>	<u>18.78</u>
	Supplies & Services	266,298.00	52,965.37	52,965.37	213,175.31	19.89
	Capital Outlay					
505-435-100-725	Airport Improvements	<u>180,000.00</u>	<u>799.32</u>	<u>799.32</u>	<u>179,200.68</u>	<u>0.44</u>
	Capital Outlay	180,000.00	799.32	799.32	179,200.68	0.44
	Interest - Debt Service					
505-435-100-821	Principal - LeaseLoans	14,347.00	0.00	0.00	14,347.00	0.00
505-435-100-881	Interest - LeasesLoans	<u>807.00</u>	<u>0.00</u>	<u>0.00</u>	<u>807.00</u>	<u>0.00</u>
	Interest - Debt Service	<u>15,154.00</u>	<u>0.00</u>	<u>0.00</u>	<u>15,154.00</u>	<u>0.00</u>

<u>Account Number</u>	<u>Description</u>	<u>Budget</u>	<u>Month to Date</u>	<u>Year To Date</u>	<u>Available</u>	<u>% Expended</u>
Expense Total		<u>473,231.00</u>	<u>55,196.44</u>	<u>55,196.44</u>	<u>417,877.24</u>	<u>0.1166</u>
435	Airport	<u>473,231.00</u>	<u>55,196.44</u>	<u>55,196.44</u>	<u>417,877.24</u>	<u>11.66</u>
Expense Total		473,231.00	55,196.44	55,196.44	417,877.24	0.1166

General Ledger
Revenue Analysis



City of
Los Banos
At the Crossroads of California

User: ktomas
Printed: 09/09/16 08:27:17
Period 01 - 03
Fiscal Year 2017

<u>Account Number</u>	<u>Description</u>	<u>Budget</u>	<u>Month to Date</u>	<u>Year To Date</u>	<u>Unrealized Revenue</u>
505-000-311-015	Property Tax Unsecured	-4,500.00	0.00	0.00	-4,500.00
505-000-331-010	Federal Grant	-150,000.00	0.00	0.00	-150,000.00
505-000-334-010	State Grant	-10,000.00	0.00	0.00	-10,000.00
505-000-346-010	Airport Tie Down Fees	-300.00	-170.00	-170.00	-130.00
505-000-346-020	Aviation Fuel	-300,000.00	-44,957.86	-44,957.86	-255,042.14
505-000-361-010	Interest Earnings	-1,500.00	0.00	0.00	-1,500.00
505-000-363-014	Rental - Land & Buildings	-90,000.00	-27,403.46	-27,403.46	-62,596.54
505	AIRPORT FUND	-556,300.00	-72,531.32	-72,531.32	-483,768.68
Revenue Total		-556,300.00	-72,531.32	-72,531.32	-483,768.68



City of
Los Banos
At the Crossroads of California

Agenda Staff Report

TO: Airport Advisory Commission

FROM: Paul Cardoza, Parks & Recreation Operations Manager

DATE: September 20, 2016

SUBJECT: AWOS System Overview

TYPE OF REPORT: Informational Item

Recommendation:

Informational item only, no action to be taken.

Discussion:

Attached is the Automated Weather Observation System (AWOS) information guide, provided by All Weather Inc.

Attachments:

AWOS Information Guide

Aviation Weather Systems

Air Traffic Control Systems

Meteorological Sensors

Custom Automated Weather Stations

FAA Certified AWOS

- Time-Tested Quality and Reliability
- Cutting Edge Technology
- Simple, Long-Term Support

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Email Us

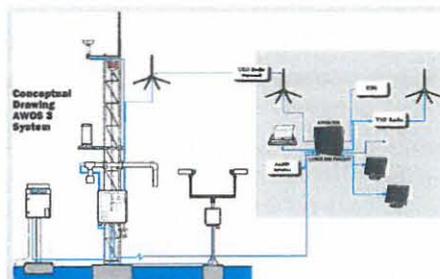
Or Give Us a Call:
+1 (916) 928-1000

Certified Configurations AWOS A AWOS I AWOS II/AV **AWOS III** AWOS III-P AWOS III-PT AWOS III-PTZ

AWOS III

The AWOS III includes all of the high quality sensors provided by the AWOS II but also includes a ceilometer. The model 8339 laser ceilometer provides readings of cloud height, cloud density, and sky condition.

<u>1190</u>	<u>7150</u>	<u>5190-F</u>	<u>8190</u>
<u>2040</u>	<u>8364-E</u>	<u>6021-A</u>	<u>8339-F</u>



Site Preparation Checklist

Site Evaluation

Record Site Information

Form 7460-1

FCC Licenses

Site Preparation Manual

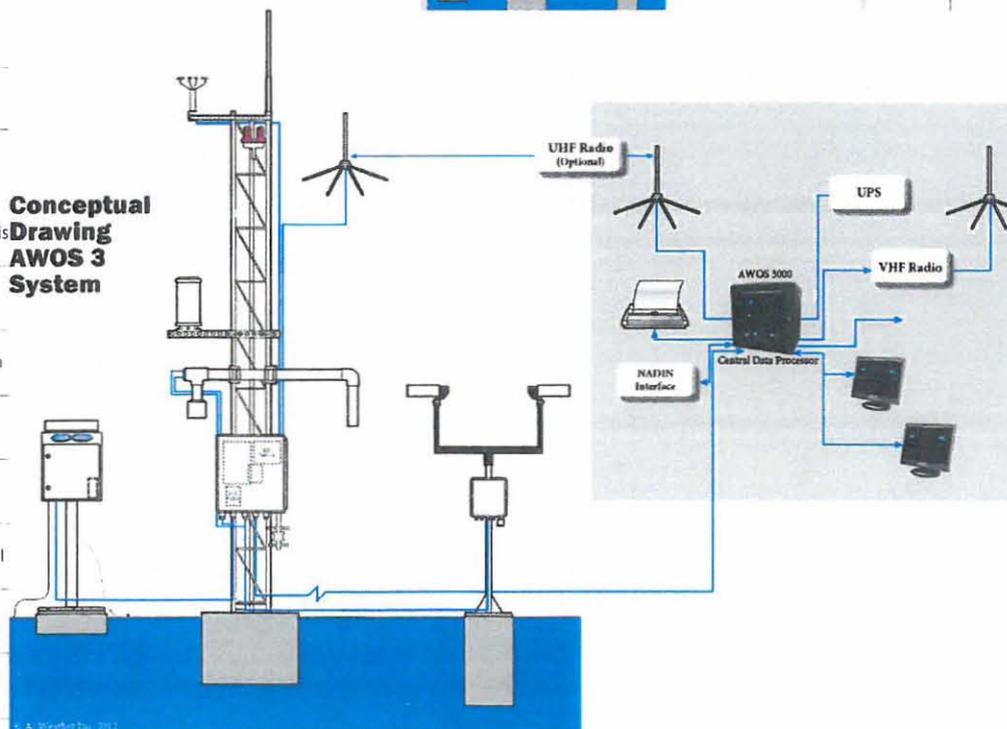
Required Materials

Tower Type

Site Information Forms

Notice to Proceed

Conceptual Drawing AWOS 3 System

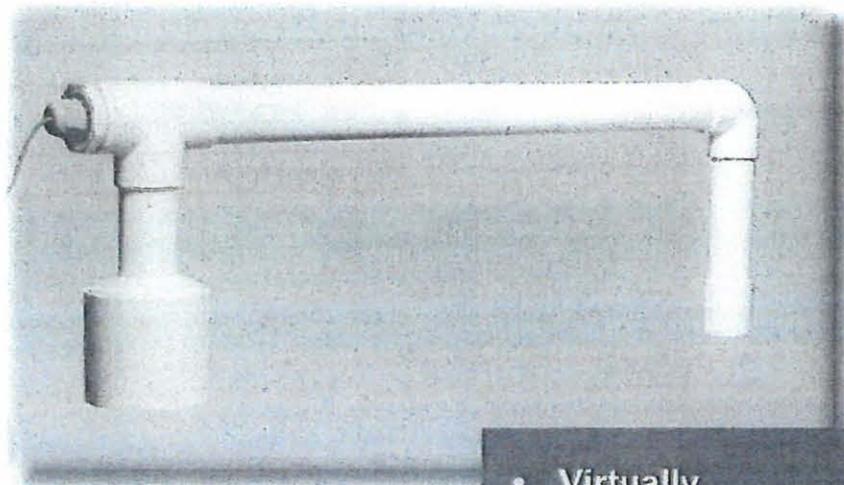


For additional information, call us at 1-800-824-5873 or email us [here](#).



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Motor Aspirated Radiation Shield 8190 Series



- Virtually Maintenance Free
- Heavy Duty
- Reliable

Overview

The 8190 Series Motor Aspirated Radiation Shields (MARS), manufactured by AWI, provide protected mounting for temperature and humidity probes, shielding them from direct solar heating and precipitation contact. The 8190 series are virtually maintenance-free radiation shields constructed of heavy-duty, non-corrosive polymer, and featuring a reliable, long-life 12 VDC fan for continuous aspiration. Each MARS accommodates one probe: a temperature probe, a humidity probe, or a combination temperature/humidity probe. All cable terminations to the MARS are made through weatherproof connectors mounted on the enclosure.

SENSORS

SPECIFICATIONS

Parameter	Specification
Operating Temperature Range	-40° to +55°C
Radiation Error	0.5°F @ 12VDC and 1000 W/m ² solar radiation
Air Flow	360 ft./min. @ 12VDC
Fan Life	70,000 hours @ 40°C
Power	8-15 VDC

ORDERING INFORMATION

Part Number	Description
8190-01	Motor Aspirated Radiation Shield (Corrosion Resistant)
8190-02	Motor Aspirated Radiation Shield (Adapted for -60° to +60°C temp probe.)
8190-03	Motor Aspirated Radiation Shield (modified for use with a frangible tower)

DIMENSIONS & WEIGHTS

Size	42" x 13.5" x 6" (107 cm x 35 cm x 15 cm)
Weight	10 lbs (4.6 kg)
Shipping Dimensions	48" x 19" x 8" (122 cm x 48.3 cm x 20.3 cm)
Shipping Weight	21 lbs (9.53 kg)





allweatherinc

Laser Ceilometer Model 8339

Overview

The 8339 Laser Ceilometer, manufactured by AWI, measures cloud height and thickness, in addition to vertical visibility, detecting up to four cloud layers simultaneously to a distance of 25,000 vertical feet. Its precision makes it ideal for applications requiring the highest in performance and reliability, such as aviation and meteorological studies.

A laser pulse is emitted into the atmosphere and backscatter analyzed. Using the speed of light, the altitude of each cloud base and top is determined. Due to poorly defined borders or a sparse composition, some clouds are much more difficult to measure than others. Depending on the current and historical sky conditions, an adaptive algorithm determines the number of returns needed to maintain accuracy.

Accuracy by Design

Accurate measurement of cloud height and thickness is all weather conditions, including heavy precipitation and low clouds, can cause serious errors in other ceilometers. Proprietary algorithms and digital techniques from 20 years of cloud detection research and manufacturing are applied, allowing the 8339 ceilometer to provide accurate information even in difficult circumstances.

In addition, the Model 8339 is Federal Aviation Administration (FAA) certified, meeting all of the most current regulatory requirements.

Long Life

Sensing circuits and optimization algorithms control the pulse frequency, output power and temperature of the



laser itself in order to dramatically extend its life.

Extensive Self-Diagnostics

An array of self-tests executed in the background during operation detects faults and reports then, along with identifying the replaceable module associated with the fault. Errors are reported both visibly in the sensor and electronically through the output string.

Designed by Our Customers

Quickly diagnosing a failed module is only one part of quickly restoring operational readiness. The serviceable design of the 8339 was influenced by our customers. Using their input to engineer the package and configuration of "Line

Replacement Units," repair can be accomplished in 30 minutes or less.

In addition, the 8339 is enclosed in a NEMA 4X stainless steel package that will stand up to the harshest environmental conditions. From corrosive marine air to blowing desert sand, the 8339 is designed to last.

Solid Reputation

Over the years, AWI has developed a reputation for accuracy and reliability and is the preferred development partner of the FAA. In addition to supplying over 1,800 ASOS, AWOS and AWSS systems to the FAA, NWS, and Department of Defense, our solutions also meet the stringent requirements of international standards organizations around the world, including the ICAO, WMO, and Transport Canada.

SENSORS

SPECIFICATIONS

Parameter	Specification
Measurement Range	12,500 or 25,000 ft. (selectable)
Resolution	12.5 ft
Accuracy	±20 ft
Cloud Layers	Up to 4, base and depth
Measurement Cycle	Configurable to 30, 60, or 120 second sampling per reporting interval; can be set to 180 seconds when no clouds detected
Operating Temp.	-40°C to +60°C
Storage Temp.	-50°C to +70°C
Relative Humidity	0–100%, condensing
Laser	
LIDAR	InGaAs, pulsed diode
Wavelength	905 ± 10 nm
Pulse Width	50 ns
Collector Type	Si avalanche photodiode, variable gain, temp compensated
Optics	Side-by-side optical channels
Laser Safety	FDA Class I, 21 CFR1040
Power Requirements	
Power Supply	95–240 V AC, 47–64 Hz, 100 W
Mechanical	
Enclosure	NEMA 4X stainless steel
Mounting	Single-leg pedestal; 2.5" pipe, unistrut mounted

ORDERING INFORMATION

Part Number	Description
8339-F	110 VAC Ceilometer
8339-G	220 VAC Ceilometer
83391-00	115 VAC Heater/Blower
83392-00	230 VAC Heater Blower
83395-00	Battery Back-up Kit
M491762-00	Service Port Cable
M028181-00	Desiccant
M491763-01	Service/Programming Cable
M488318-00	Galvanized Pipe Kit

DIMENSIONS & WEIGHTS

Dimensions (Ceilometer)	9" x 16" x 19" (230 x 410 x 480 mm)
Dimensions (Ceilometer & heater/blower)	16" x 20" x 27" (410 x 510 x 690 mm)
Ceilometer Weight	43 lbs (19.5 kg)
Heater/Blower Weight	18 lbs (8 kg)
Shipping Dimensions	26" x 24" x 15" (660 x 610 x 381 mm)
Shipping Weight	60 lbs. (27.22 kg)



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Rev. B 09/2011



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Tipping Bucket Rain Gauge 6021 Series

Tipping Bucket Rain Gauge

The 6021 series Tipping Bucket Rain and Snow Gauges are standard, precision instruments for measuring rainfall volume and/or rate. Rain enters the gauge through a large funnel, the rim of which is protected by a metal ring to prevent distortion. Collected water passes through a debris-filtering screen and is funneled into one of the two tipping buckets inside the gauge. The bucket tips when a given amount of water has been collected; the amount is determined by gauge calibration. As the bucket tips, it causes a 0.1-second switch closure. The tip also brings a second bucket into position under the funnel, ready to fill and repeat the cycle. After the rain water is measured, it drains out through tubes in the base of the gauge. The drain holes are covered by screens to prevent insect entry.



Electrically Heated Rain & Snow Gauge

For areas where snow or freezing rain may occur, the 6021 series Electrically Heated Rain and Snow Gauges are available. Each gauge includes 4 separate heaters. A NiChrome wire heater wraps around the collection funnel to melt the precipitation. A second NiChrome wire heater warms the internal components and the gauge base to prevent refreezing of the water inside the gauge. In addition, a cartridge heater is installed into each of the two gauge drain tubes

so that the measured precipitation passes out of the gauge freely without freezing on contact with the cold outside air. The funnel and the base heaters are controlled by thermostats; the drain tube heaters are continuous duty. Rain gauge models may operate on either 115 VAC or 230 VAC power.

Available Models

The 6021 series gauges have an orifice diameter of approximately 8 inches and a resolution of either 0.01 inch or 0.1 mm.

All gauges utilize a mercury-

wetted reed switch. The mercury wetting prevents the arcing that is common with reed switches and provides a better electrical contact.

Features

AWI rain gauges are designed for many years of accurate, trouble-free operation. They utilize all metal construction, including aluminum, nickel-plated brass, and stainless steel. The built-in level and predrilled feet aid in proper installation. The calibrated measurement accuracy is $\pm 0.5\%$ at a precipitation rate of 0.5 inch per hour, with a repeatability of $\pm 3\%$.

SENSORS

SPECIFICATIONS

	6021-A	6021-B	6021-D
Sensor Type	Tipping Bucket		
Switch	Form A reed, mercury-wetted		
Output	0.1-second switch closure		
Sensitivity	1 tip per 0.01"	1 tip per 0.1 mm	1 tip per 0.1 mm
Resolution	0.01" (0.25 mm)		
Calibrated Accuracy	0.002"/h (0.05 mm/h) or $\pm 0.5\%$ of actual, whichever is greater		
Repeatability	$\pm 3\%$ @ 0.5"/h		
Collector Orifice	8.214" diameter (208 mm)		
Size	17.5" high x 8.5" diameter (445 x 210 mm)		
Funnel Heater	NiChrome wire in foil, 125 W, thermostatically controlled		
Base Heater	NiChrome wire in foil, 150 W, thermostatically controlled		
Drain Tube Heaters	2 cartridge heaters, 20 W each, continuous duty		
Thermostat Set Point			
Funnel Heater	~11°C (52°F)		
Base Heater	~6°C (43°F)		
Operating Temperature	-25°C to +40°C		
Heater Voltage	115 V AC, 60 Hz	230 V AC, 50 Hz	

The Model 6021-A is Federal Aviation Administration (FAA) certified, meeting the most current regulatory requirements.

ORDERING INFORMATION

Part Number	Description
60103	Rain Gauge Calibrator
60211	Heater Option Kit for Model 6011-A/6011-B, 115 V AC
60212	Heater Option Kit for Model 6011-A/6011-B, 230 V AC
T600723	3-Conductor, 16 AWG Heater Power Cable
T600502	2-Conductor, 20 AWG shielded cable to connect rain gauge to output device (specify length)

DIMENSIONS & WEIGHTS

Dimensions	
Product Weight	8 lbs (3.6 kg)
Shipping Weight	15 lbs (6.8 kg)



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Fax: 916-928-1165

Rev. B 09/2011



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Laser Ceilometer Model 8339

Overview

The 8339 Laser Ceilometer, manufactured by AWI, measures cloud height and thickness, in addition to vertical visibility, detecting up to four cloud layers simultaneously to a distance of 25,000 vertical feet. Its precision makes it ideal for applications requiring the highest in performance and reliability, such as aviation and meteorological studies.

A laser pulse is emitted into the atmosphere and backscatter analyzed. Using the speed of light, the altitude of each cloud base and top is determined. Due to poorly defined borders or a sparse composition, some clouds are much more difficult to measure than others. Depending on the current and historical sky conditions, an adaptive algorithm determines the number of returns needed to maintain accuracy.

Accuracy by Design

Accurate measurement of cloud height and thickness is all weather conditions, including heavy precipitation and low clouds, can cause serious errors in other ceilometers. Proprietary algorithms and digital techniques from 20 years of cloud detection research and manufacturing are applied, allowing the 8339 ceilometer to provide accurate information even in difficult circumstances.

In addition, the Model 8339 is Federal Aviation Administration (FAA) certified, meeting all of the most current regulatory requirements.

Long Life

Sensing circuits and optimization algorithms control the pulse frequency, output power and temperature of the



laser itself in order to dramatically extend its life.

Extensive Self-Diagnostics

An array of self-tests executed in the background during operation detects faults and reports them, along with identifying the replaceable module associated with the fault. Errors are reported both visibly in the sensor and electronically through the output string.

Designed by Our Customers

Quickly diagnosing a failed module is only one part of quickly restoring operational readiness. The serviceable design of the 8339 was influenced by our customers. Using their input to engineer the package and configuration of "Line

Replacement Units," repair can be accomplished in 30 minutes or less.

In addition, the 8339 is enclosed in a NEMA 4X stainless steel package that will stand up to the harshest environmental conditions. From corrosive marine air to blowing desert sand, the 8339 is designed to last.

Solid Reputation

Over the years, AWI has developed a reputation for accuracy and reliability and is the preferred development partner of the FAA. In addition to supplying over 1,800 ASOS, AWOS and AWSS systems to the FAA, NWS, and Department of Defense, our solutions also meet the stringent requirements of international standards organizations around the world, including the ICAO, WMO, and Transport Canada.

SENSORS

SPECIFICATIONS

Parameter	Specification
Measurement Range	12,500 or 25,000 ft. (selectable)
Resolution	12.5 ft
Accuracy	±20 ft
Cloud Layers	Up to 4, base and depth
Measurement Cycle	Configurable to 30, 60, or 120 second sampling per reporting interval; can be set to 180 seconds when no clouds detected
Operating Temp.	-40°C to +60°C
Storage Temp.	-50°C to +70°C
Relative Humidity	0–100%, condensing
Laser	
LIDAR	InGaAs, pulsed diode
Wavelength	905 ± 10 nm
Pulse Width	50 ns
Collector Type	Si avalanche photodiode, variable gain, temp compensated
Optics	Side-by-side optical channels
Laser Safety	FDA Class I, 21 CFR1040
Power Requirements	
Power Supply	95–240 V AC, 47–64 Hz, 100 W
Mechanical	
Enclosure	NEMA 4X stainless steel
Mounting	Single-leg pedestal; 2.5" pipe, unistrut mounted

ORDERING INFORMATION

Part Number	Description
8339-F	110 VAC Ceilometer
8339-G	220 VAC Ceilometer
83391-00	115 VAC Heater/Blower
83392-00	230 VAC Heater Blower
83395-00	Battery Back-up Kit
M491762-00	Service Port Cable
M028181-00	Desiccant
M491763-01	Service/Programming Cable
M488318-00	Galvanized Pipe Kit

DIMENSIONS & WEIGHTS

Dimensions (Ceilometer)	9" x 16" x 19" (230 x 410 x 480 mm)
Dimensions (Ceilometer & heater/blower)	16" x 20" x 27" (410 x 510 x 690 mm)
Ceilometer Weight	43 lbs (19.5 kg)
Heater/Blower Weight	18 lbs (8 kg)
Shipping Dimensions	26" x 24" x 15" (660 x 610 x 381 mm)
Shipping Weight	60 lbs. (27.22 kg)



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Rev. B 09/2011



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Ultrasonic Wind Sensor Model 2040

Overview

The AWI Model 2040 Ultrasonic Wind Sensor provides the best solution on the market for reliable, accurate and cost-effective wind speed and directional measurement. It combines the latest patented advances in ultrasonic technology together with AWI's years of experience as the recognized world leading supplier of all-weather sensors. The elimination of moving parts, together with a rugged stainless steel construction, means that AWI Ultrasonic Wind Sensor is virtually maintenance-free and requires no calibration on site. The heated head keeps the unit free from ice and snow, providing continuous use even in the most extreme weather conditions.

A new flexible design ensures that the AWI Ultrasonic Wind Sensor can be configured by the user to their exact requirements, which may include analog outputs, 10 Hz output, heating or sonic temperature.

The Windows™ based WindCom communications package allows the user to operate the anemometer in various modes, permitting the measurement of U & V vectors, or wind speed and direction. Communication is via an RS-422 bidirectional link, which allows several units to be networked together and data to be logged on demand. The AWI Ultrasonic Wind Sensor has been rigorously tested to internationally recognized standards and meets the stringent performance criteria specified by airport, marine, oil, production, meteorological and utility organizations around the world.



- Virtually Maintenance Free
- No On-Site Calibration
- Great Solution for Extreme Weather Conditions
- FAA Certified

Design

The Model 2040 Wind Sensor is a very robust, lightweight unit with no moving parts, outputting wind speed and direction. The units of wind speed, output rate, and formats are all user selectable.

The Model 2040 is available with or without de-icing heating (recommended if icing is likely), and with or without analog outputs.

This wind sensor can also be used in conjunction with a PC, datalogger or other device, provided it is compatible with the RS-422 output or the analog outputs. Multiple units can be networked if required.

Alternatively, the Model 2040 is designed to connect directly to the

AWI WindDisplay unit to provide a complete wind speed direction system without any configuration required by the user.

The output message format can be configured in Polar, UV (2-axis), NMEA (0183 Version 3), Tunnel formats, and as either a Continuous output or Polled (requested by host system).

The Model 2040 may be configured using standard communications software on a PC.

The Model 2040 is Federal Aviation Administration (FAA) certified, meeting the most current regulatory requirements.

SENSORS

SPECIFICATIONS

MEASUREMENT	
Output	1, 2, 4, 5, 8, 10 Hz
Parameters	UV, Polar, NMEA, Tunnel
Units	m/s, Knots, MPH, KPH, ft/min
Averaging	Flexible 1-3600 seconds
WIND SPEED	
Range	0 - 65 m/s (0 - 145 mph)
Accuracy	±2%
Resolution	0.01 m/s
Offset	±0.01 m/s
DIRECTION	
Range	0 - 359°
Dead Band Direction	None
Accuracy	± 2°
Resolution	1°
SONIC TEMPERATURE	
Range	-40°C to +70°C
Starting Threshold	0.01 m/s
DIGITAL OUTPUT	
Communication	RS-422, full duplex
Baud Rates	"1200, 2400, 4800, 9600, 19200, 38400"
Formats	"8 data bits; odd, eve, or no parity"
Anemometer Status	"Supplied as part of standard message"
OPTIONAL ANALOG OUTPUTS	
Quantity-3	Speed, direction, status, or sonic temperature
Scale	Multiples of ±10 m/s up to ±70 m/s max
Type	±2.5 V, 0-5 V, or 4-20 mA
V(output) Resistance	60 Ω
4-20 mA Loading	10-300 Ω
POWER REQUIREMENTS	
Anemometer Only	9-30 V DC(40 mA @ 12 V)
Heating Option	3 A @ 24 V AC/DC
ENVIRONMENTAL	
Operating Temp Range	-55°C to +70°C
Relative Humidity	5% to 100%
Precipitation Tolerance	300 mm/h
Materials	316 stainless steel
Moisture Protection	IP66 (NEMA4X)
EMC	"EN 61000-6-2:2001 EN 61000-6-3:2001"

ORDERING INFO

Part Number	Description
2040	Ultrasonic Wind Sensor
2040H	Ultrasonic Wind Sensor with Heat
2040HH	Ultrasonic Wind Sensor with High Heat
M488270-01	Corrosion Resistant Mounting Kit
M488302-00	Mounting Bracket - Pole Mounting

DIMENSIONS & WEIGHTS

Size	15.94" x 8.27" (405 mm x 210 mm)
Weight	3.31 lbs (1.5 kg)



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Rev. B 09/2011



Temp/Humidity Probe Model 5190



Overview

The Model 5190-F Temperature/Humidity Probe is designed for a variety of environmental monitoring applications, including All Weather Inc.'s Automated Weather Observing Systems (AWOS). The 5190-F operates with a DC supply voltage and has a low current draw. Relative humidity is measured with a thin-film capacitor sensor, and temperature is measured using a Pt100 RTD with an accuracy of $\pm 0.1^{\circ}\text{C}$. The signals from the sensors are converted into two linearized voltage output signals.

Parameter	Output Voltage	Range
RH	0-1.0 V DC	0-100% RH
Temperature	0-1.0 V DC	-40°C to +60°C

The Model 5190 is Federal Aviation Administration (FAA) certified, meeting all of the most current regulatory requirements.

SENSORS

SPECIFICATIONS

Parameter	Specification
Humidity Sensor	Thin-Film Capacitor
Temperature Sensor	Pt100 RTD
Operating Temperature Limits	-40°C to +60°C
Humidity Output Signal (Linear)	0-1.0 V DC = 0-100% RH
Temperature Output Signal (Linear)	0-1.0 V DC = -40°C to +60°C
Minimum Load per Output	10 kΩ
Accuracy (at 23°C)	±1.5% RH
±0.1°C	
First Signal After	2.3 s
Measurement Interval	0.7 s
Supply Voltage	5-24 V DC
Current Consumption	approx. 4 mA
Cable Length	5 m (16 ft), tinned ends
Sensor Protection	Wire mesh filter

ORDERING INFORMATION

Part Number	Description
5190-F	Temperature and Humidity Probe
8190	Motor Aspirated Radiation Shield

DIMENSIONS & WEIGHTS

Size	8.19" x 0.59" diameter (208 mm x 15 mm diameter)
Weight	0.27 lbs (120 g)
Shipping Dimensions	8" x 10" x 2" (203 mm x 254 mm x 51 mm)
Shipping Weight	1 lb (454 g)



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Rev. B 09/2011



Visibility Sensor Model 8364-E

Overview

The 8364-E Dual Technology Visibility Sensor measures transparency of the atmosphere and calculates its extension coefficient and meteorological optical range (MOR) values. Using both direct attenuation and forward scatter technologies, the 8364-E can measure airborne particle sizes once available only from a transmissometer, while having the reliability and cost-effectiveness of a forward scatter visibility sensor. Its precision makes it ideal for applications requiring the highest in performance and reliability, such as aviation and meteorological studies.

Accuracy by Design

Accurate measurement of visibility in all weather conditions, including heavy precipitation, fog, snow, smoke and blowing sand is limited in other sensors. Two-headed forward scatter visibility sensors that rely solely on light scattering techniques are blind to certain size airborne particles that do not reflect light. By measuring both the light attenuation and light scattering at the same time the 8364-E computes ratio-metric values to derive the most accurate answer. This measuring process cancels several variables during



calculation and ensures that the visibility measurement is not affected by contaminants on the lenses, or by temperature effects on the emitters and electronics.

By having two direct attenuation and two scatter values for every measurement the 8364-E does not have to depend upon absolute measurements to be the most accurate sensor available today. This advantage means that measurements are independent of the effects of the environment, thereby maximizing accuracy, reducing recurring calibration, and minimizing maintenance requirements.

Scientifically Valid Chain of Calibration

Every 8364-E is calibrated through a scientifically valid chain of reference. The response of the calibration device can be clearly traced to the "FAA golden standard transmissometer" at the FAA testing facility. This standard was established in direct comparison during certification of the sensor for aviation quality measurements.

Extensive Self-Diagnostics

If one of the heads should fail the four-headed configuration allows for continued operating with only three sensor heads. Built-in test (BIT) functions report the sensor head failure so that appropriate maintenance can be scheduled. The BIT functions also monitor power supply voltages, heater status, and indications of abnormal operation.

Dual-Technology Visibility Sensor

For more information on "why four heads are better than two heads & even better than a transmissometer" see the AWI website technical reference section. http://www.allweatherinc.com/reference/toc_techref.html

SENSORS

SPECIFICATIONS

<i>Performance</i>	
Measurement Range	33 ft to 20 miles (10 m to 32 km)
Accuracy	±15% RMSE
Measurement Type	MOR or Extinction Coefficient
Averaging Intervals	3, 5, or 10 min
Measurement Units	miles or km
Operating Principle	Dual Technology - direct attenuation and forward-scatter
Light Source	Infrared LED (865 nm ± 35 nm)
Detector	Silicon Photodiode
Principal Scatter Angle	35 degrees
Communication	RS-485 or RS-232
Output Interval	Programmable: Interrogate, 10 s, 1 min, or 10 min
Baud Rate	Programmable: 300, 1200, 2400, 4800, or 9600 bps
Output Format	ASCII characters - 8 data bits, 1 stop bit, no parity
<i>Analog Output Option</i>	
Output Voltage	0-1 V
Output Impedance	100 Ω
<i>Handheld Terminal Port</i>	
Baud Rate	1200 bps
Serial Port Parameter Setting	8-N-1 (8 data bits, no parity, 1 stop bit)
<i>Power Requirements</i>	
Supply Voltage	115 V AC, 50 - 60 Hz, 200 W
<i>Environmental</i>	
Operating Temperature	-40 to +136°F (-40 to +55°C)
Storage Temperature	-58 to +158°F (-50 to +70°C)
Relative Humidity	0-100%, condensing
Wind	up to 120 knots (220 km/h)
Hail	up to 0.5" (1.3 cm) diameter
Ice Buildup	up to 0.5"/h (1.3 cm/h)
Elevation	-100 to 10,000 ft ASL (-30 to 3030 m ASL)

ORDERING INFORMATION

Part Number	Description
8364-E	Dual Technology Visibility Sensor
M403326-00	Day/Night sensor assembly
M488173-01	Unistrut mounting hardware (control unit)
M488174	230 Vac conversion kit
T600503-00	Signal cable, specify length
M492557	Power cable, specify length
M104744	Calibrator
M488317-00	Galvanized Mounting Pipe Kit
M488150	Grounding kit
M488175	Handheld Terminal kit
11903	Backup battery kit

DIMENSIONS & WEIGHTS

Sensor Assembly	61" L × 19" W × 21" H (155 cm × 48 cm × 53 cm)
Controller Assembly	14" W × 16" H × 8" D (35 cm × 40 cm × 20 cm)
Weight	74 lbs (33 kg)
Shipping Weight	135 lbs (61 kg)



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