

P 01

**DOCKET**  
02-AFC-1

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DATE NOV 08 2004

REC'D. SEP 30 2005

# ARNOLD AND ARNOLD, INC.

Risk Management and Adjusting of Marine and Aviation Claims Throughout the Pacific Basin  
P&I, Hull, Cargo and General Liability

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8 November 2004

James S. Adams  
California Energy Commission  
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Facsimile (916) 651-8868

**DOCKET**  
199-AFC-10

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DATE NOV 08 2004

REC'D. SEP 14 2005

RE: Blythe I Plant Air Safety Impact Assessment

## STATUS REPORT

Dear Mr. Adams:

### FLIGHT EVALUATION

#### Executive Summary

This flight test conducted at less than maximum powerplant output found significant turbulence generated by the powerplant at normal pattern altitudes. The Automated Surface Observing System<sup>1</sup> (ASOS) does not have a warning, note or caution on it yet. Further flight testing may be useful when arrangements have been made with the powerplant operator to bring the powerplant to maximum output.

#### Background

In accordance with your instructions, we conducted an evaluation overflight of the Blythe I powerplant early the morning of 3 November 2004. Prior to the flight we coordinated with Chris Allen, the Florida Power and Light (FPL) Plant Manager. Chris told us winds were predicted to be calm and they would have the plant operating at capacity. He also asked if we could take one of their people up to monitor the

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evaluation. After a discussion with you, we agreed. It turns out they actually wanted to bring two people, which in the end worked out very well. They brought a radio to communicate with the plant so we could confirm power output.

We arrived in Blythe just before sunrise on 3 November 2004. Temperature on arrival just before sunrise was 45°F<sup>1</sup>. Temperatures stayed at 45°F through the flight until the last three passes when they rose to 48°F<sup>2</sup>. On landing we met with the FPL people. We conducted a briefing with the FPL personnel and took off at about 06:30am, just under a half hour after official sunrise. Aboard were:

Charles W. Arnold - Pilot  
Jonathon "Jack" Frost - FPL Mechanical Engineer<sup>3</sup>  
Robert C. Winn - FPL Consultant<sup>4</sup>

#### *Flight Summary*

The flight evaluation of the powerplant was conducted in N6867Y, a Piper PA-27 Aztec, a twin engine six place low wing aircraft. The Aztec is typical of light twin engine business aircraft, with a gross weight of 5,200 pounds. The evaluation passes were conducted at an indicated airspeed of 120 knots in a clean configuration<sup>5</sup>. The final passes were conducted in landing configuration, gear and flaps down at 85 knots.

As can be seen in the accompanying photographs, the cooling tower plumes were quite prominent reaching to over 500 feet above ground level. The powerplant was not running at full capacity. We were advised power output was 124Mw until the last three passes when it was increased to 146Mw. Temperatures as called on the ASOS were relatively constant. Wind was calm, temperature and dew point 45°F/36°F<sup>6</sup> from 15 minutes before sunrise until three passes before the end of our overflights when it changed to 270°/3 knots and 48°F/36°F<sup>7</sup>. The flight evaluation took 1.3 hours of aircraft flight time.

We started the overflights at 3,000' Above Ground Level (agl), but encountered no turbulence until we reached 1,000' agl. At that level we encountered light turbulence, which got worse as we descended. At no time did turbulence go beyond light to moderate levels. Both FPL people brought non-calibrated "G" meters to measure

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<sup>1</sup> 7°C

<sup>2</sup> 9°C

<sup>3</sup> We understand Mr. Frost is a Commercial Pilot, an ex-US Navy Air Traffic Controller and an engineer.

<sup>4</sup> Mr. Winn, of Engineering Systems, Inc. is said to be an ex-US Air Force C-130 Transport Pilot, his card indicates he holds some type of doctoral degree and designation as a Professional Engineer.

<sup>5</sup> Clean Configuration - Gear and Flaps up. The airspeed of 120 knots is just under the aircraft's maneuvering speed. The speed and configuration were chosen to optimize control capability in the event significant deviation from straight and level flight were encountered.

<sup>6</sup> 7°C/2°C

<sup>7</sup> 9°C/2°C

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vertical acceleration. The readings were consistent between the two and consistent with the accelerations felt by the pilot. Full control was maintained without difficulty on all passes. The maximum deviation from level flight was 15° of bank with no appreciable pitch change. Flight through the visible plume was no worse than directly above it. We intentionally put one wing in the cooling tower plume on two occasions; the aircraft rolled away from the plume, but was fully controllable once clear of the plume. As with flights centered on the plume, one wing in the plume resulted in maximum deviation from level flight of 15° in bank with no appreciable pitch change. The direction of roll was predictable, however.

With the exception of the last three passes, all passes were made at 120 Knots Indicated Airspeed, the final passes were made at 85 Knots. As would be expected, the turbulence at the lower airspeed was less sharp, but resulted in more deviation from level.

There was almost no ambient turbulence level in the local area below 500' agl. The ride was very smooth throughout the area, with the exception of directly over the powerplant towers and stacks. Flight conditions through the plume were not considered to be much worse than a bumpy desert day.

#### *HRSG Stacks – Cooling Towers*

There is a clear difference between the turbulence encountered over the HRSG Stacks and the Cooling Towers. At the power levels seen on the evaluation flight, both generated manageable turbulence. The stack turbulence was much sharper than the tower turbulence, but also of much shorter duration. The deviation from straight and level flight was less over the stacks than over the towers, even when the flights were across the line of the towers, rather than along them.

#### *Traffic Pattern*

During the course of our evaluation flight, we had the opportunity to review the traffic pattern. We think it would be advisable to change the traffic pattern for Runway 26 to a right hand pattern. This would mean that both Runway 8 and Runway 26 traffic patterns would be to the north of the runway. This would keep traffic away from the community of Mesa Verde south of the airport and eliminate potential problems from the stack overflights. We see no downside to using a right hand pattern for Runway 26.

One of the FPL people commented that displacing the threshold<sup>ii</sup> would result in a higher overflight altitude. That is true, but the space available on the airport property would not allow a sufficient displacement of Runway 8-26 to be effective. In addition, there is a small range of hills west of Runway 8-26 that interfere with the departures and approaches to Runway 8. It is also clear Runway 17-35 cannot be lengthened appreciably due to property constraints. Any longer runway would likely have to be along the old Runway 3-21, with the primary approach to Runway 21.

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#### *Comments*

We were disappointed the plant was not operating at full power, although we had been assured it would be. At the same time, the turbulence seen at the lower power output clearly has potential to cause problems for an inexperienced pilot, or one not paying attention.

It is clear the FPL representatives appreciate there is a problem with the plant in its current configuration and location with respect to the airport. They are going to discuss the potential for plume dispersal using exhaust fairings<sup>8</sup> with plant personnel. They were also of the opinion that variable speed fans in the cooling towers might be of use to the plant, but would not help with the safety issues.

#### *Further Testing*

We would like to perform another flight check when the weather is colder and the powerplant is operating at full power. If CEC decides to ask NOAA to map the plumes with their Doppler Radar, we suggest a concurrent flight check to correlate numerical values with real world flight-results. Inasmuch as there is expected to be a several day window for the Doppler project, CEC may wish to consider having a flight evaluation with a range of aircraft; the Aztec we used for this evaluation, a single engine Piper four place and a Cessna 150 trainer, or combinations thereof.

#### *Flight Safety Comments*

The Unicom<sup>iii</sup> operated by Blythe Aviation was not operating while we were there, they had not yet opened, so we cannot comment on any warnings they may be giving. The airport ASOS announcement did not contain any warnings or mention of the powerplant. We consider this a major safety and liability issue.

As a matter of interest, as we were leaving, a student pilot with instructor came in from the west. She had no knowledge of the powerplant. She had not even noticed it, although the plume was clearly visible at the time of our conversation. She did not land over it as she came in from the other direction. We cautioned her to avoid overflight on departure.

The primary potential for a mishap would appear to be an inexperienced transient pilot, such as a solo student cross country pilot, in a low performance aircraft, such as a Cessna 150, early in the morning. Smooth morning conditions would be ripe for lulling a pilot in to a state of inattention and transiting the plume could cause an upset. An inexperienced pilot might not be able to recover from the upset. That is one reason we are so interested in getting a warning, note or caution on the ASOS and Unicom.

Pilots familiar with the local area clearly do not fly over the plant towers and stacks and the certified instrument approaches do not place pilots over the plant. The Airport Facility Directory has a note, which is picked up by the on-line services, such as the

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<sup>8</sup> These fairings could be simple elbows directing the cooling exhaust from one tower into that of another tower, thus causing an interference which might simulate the effect of wind. A light breeze appears to dissipate the turbulence markedly.

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attached Airnav page. I am of the opinion that the most dependable method of distributing the information to transient pilots is the Unicom, ASOS and Sectional Charts.

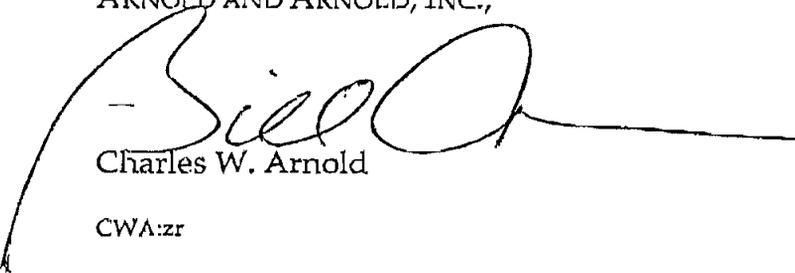
#### FUTURE ACTIVITY

We are currently waiting for ILS system pricing which we have requested from Kingboro Construction. Other than that, we have no current open items.

We await your further instructions.

Regards,

ARNOLD AND ARNOLD, INC.,



Charles W. Arnold

CWA:zr

#### Enclosures:

Flight Evaluation Data (1 page)  
Airnav Web Page  
Photographs (1 CD)

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<sup>1</sup> The Automated Surface Observing System (ASOS) is an automated observing system being sponsored by the Federal Aviation Administration, National Weather Service (NWS) and the Department of Defense (DOD). ASOS provides weather observations which include: temperature, dew point, wind, altimeter setting, visibility, sky condition, and precipitation. 569 FAA-sponsored and 313 NWS-sponsored ASOSs are installed at airports throughout the country.

Automated observing systems are designed to provide the pilot, and other users, airport weather observations "When they need it and where they need it." The observing systems work nonstop, updating observations every minute, 24 hours a day, every day of the year. By providing information on the atmosphere, at increasing locations, these systems are designed to improve the safety and efficiency of aviation operations as well as being the key to improving forecasts and warnings.

A basic strength of automated observing systems is that critical aviation weather parameters are measured where they are needed most; i.e., the runway touchdown zone on the airport.

The automated observing system routinely and automatically provides computer-generated voice directly to aircraft in the vicinity of airports, using FAA VHF ground-to-air radio or appended to the ATIS broadcast. In addition, the same information is available through a dial-in telephone and most of the data is also provided on the national weather data network.

<sup>ii</sup> Displacing the threshold is marking the runway surface to direct pilots to land a specified distance from the end of the paved surface. This in effect moves the runway, but it shortens the runway's length by the amount it is in effect moved. The full length is normally available for

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takeoff, however. This is a fairly common practice used to deal with obstructions or noise issues. It can only affect overflight clearances by small amounts, however.

<sup>iii</sup> Unicom - A privately-operated advisory air-to-ground radio service at uncontrolled airfields also used for pilots to make their presence and intentions known to each other. At Blythe, the Unicom frequency serves as a CTAF - Common Traffic Advisory Frequency

**BLU THE FLYOVER**

Date 3-Nov-04  
 Time 0637L  
 Sunrise 0603L  
 Aircraft PA-27/1  
 Gross Weight 4668  
 Max TOV 5200  
 Configuration Clean

Conditions  
 Altimeter 30.15  
 Speed 120 KIAS  
 Power Output 124Ww

Altitude (Feet AGL)	Direction of Flight	Turbulence over Cooling Towers	Turbulence over Stacks	G-Meter Reading	G-Meter 2 Reading	Power Output	Temp/Dewpt (°C)	Wind
3000	S	None	None	1.0/1.0	1.0/1.0	124Ww	70/20	Calm
2600	S	Bump - Light Turbulence	None	1.0/1.0	1.0/1.0	124Ww	70/20	Calm
1000	S	Bump - Light Turbulence	None	1.3/0.5	1.5/0.6	124Ww	70/20	Calm
750	S	Bump with Light to Moderate Turbulence	Sharper Bump - Light Turbulence	1.6/0.6	1.5/0.6	124Ww	70/20	Calm
500	S	Bump with Light to Moderate Turbulence	Sharper Bump with Light to Moderate Turbulence	1.6/0.5	1.8/0.2	124Ww	70/20	Calm
400	S	Bump with Light to Moderate Turbulence	Sharper Bump with Light to Moderate Turbulence	1.6/0.5	-	124Ww	70/20	Calm
300	S	Bump with Light to Moderate Turbulence	Sharper Bump with Light to Moderate Turbulence	1.7/0.5	-	124Ww	70/20	Calm
250	S	Bump with Light to Moderate Turbulence	Sharper Bump with Light to Moderate Turbulence	2.1/0.3	-	124Ww	70/20	Calm
200	W	Bump with Light to Moderate Turbulence	Decible bump of Sharp Moderate Turbulence	1.3/0.1	1.5/0	124Ww	70/20	Calm
150	W	Bump with Light to Moderate Turbulence	-	1.8/0.3	1.9/2	124Ww	70/20	Calm
On Glideslope (~330°)	W	Light to Moderate Turbulence	-	1.5/0.4	-	124Ww	70/20	Calm
On Glideslope (~330°)	W	Light to Moderate Turbulence	Sharper onset Moderate Turbulence, Start	1.5/0.5	1.7/0.5	124Ww	90/20	270°/03
On Glideslope (~330°)	W	Bump with Light to Moderate Turbulence	<<- Landing Configuration 85 knots	1.5/0.7	1.6/0.7	146Ww	90/20	270°/03
On Glideslope (~330°)	W	Bump with Light to Moderate Turbulence	-	1.5/0.7	1.6/0.7	146Ww	90/20	270°/03
150	W	Bump with Light to Moderate Turbulence	-	1.5/0.7	1.6/0.7	146Ww	90/20	270°/03

# AIRNAV.COM



**KBLH** Blythe Airport  
Blythe, California, USA



**GOING TO BLYTHE?**



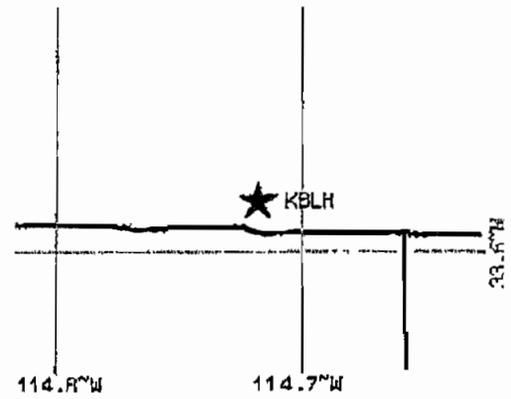
Reserve a  
Hotel Room

## FAA INFORMATION EFFECTIVE 30 SEPTEMBER 2004

Loc | Ops | Rws | IFR | FBO | Links  
Com | Nav | Svc | Stats | Notes

### Location

FAA Identifier: BLH  
 Lat/Long: 33-37-08.986N / 114-43-00.755W  
 33-37.14977N / 114-43.01258W  
 33.6191628 / -114.7168764  
 (estimated)  
 Elevation: 397 ft. / 121.0 m (surveyed)  
 Variation: 13E (2005)  
 From city: 6 miles W of BLYTHE, CA



### Airport Operations

Airport use: Open to the public  
 Sectional chart: PHOENIX  
 Control tower: no  
 ARTCC: LOS ANGELES CENTER  
 FSS: RIVERSIDE FLIGHT SERVICE STATION [1-800-WX-BRIEF]  
 NOTAMs facility: BLH (NOTAM-D service available)  
 Attendance: 0700-1700  
 Pattern altitude: 1197 ft. MSL  
 Wind indicator: lighted  
 Segmented circle: yes  
 Lights: DUSK-DAWN  
 ACTVT MIRL RYS 17/35; 08/26; AND VASI  
 RYS 17; 35 & 26 - CTAF.  
 Beacon: white-green (lighted land airport)



### Airport distance calculator

Flying to Blythe Airport? Find the distance to fly.

From  to KBLH

**CALCULATE DISTANCE**

### Airport Communications

### Sunrise and sunset

Times for 05-Nov-2004

CTAF/UNICOM: 122.8  
 WX ASOS: 120.175 (760-922-3000)

- APCH/DEP SERVICE PROVIDED BY LOS ANGELES ARTCC (BLYTHE RCAG) ON FREQS 128.15/285.6

	(UTC-8)	(UTC)
Morning civil twilight	05:37	13:37
Sunrise	06:03	14:03
Sunset	16:42	00:42
Evening civil twilight	17:08	01:08

**Nearby radio navigation aids**

VOR radial/distance	VOR name	Freq	Var
BLHr044/2.6	BLYTHE VORTAC	117.40	14E
PKEr168/29.0	PARKER VORTAC	117.90	15E

**METAR**

**KBLH** 051556Z AUTO 27003KT 10SM CLR  
 13/04 A3010 RMK AO2 SLP191  
 T01330039

**TAF**

**KBLH** 051130Z 051212 34005KT P6SM  
 SCT250  
 FM1500 VRB06KT P6SM FEW120  
 BKN250  
 FM2000 15007KT P6SM FEW120  
 BKN250  
 FM0300 23008KT P6SM BKN250  
 FM0900 33006KT P6SM SCT250

**Airport Services**

- Fuel available: 100LL JET-A
- Parking: hangars and tie-downs
- Airframe service: MAJOR
- Powerplant service: MAJOR
- Bottled oxygen: NONE
- Bulk oxygen: NONE

**Runway Information**

**Runway 8/26**

Dimensions: 6562 x 150 ft. / 2000 x 46 m  
 Surface: asphalt/porous friction courses, in fair condition

Weight limitations: Single wheel: 80000 lbs  
 Double wheel: 160000 lbs  
 Double tandem: 300000 lbs

Runway edge lights: medium intensity  
 Runway edge markings: RY 26 MARKINGS FADED.

**RUNWAY 8      RUNWAY 26**

Latitude: 33-36.99610N      33-36.99217N

Longitude: 114-43.66583W      114-42.37267W

Elevation: 394.8 ft.      393.5 ft.

Traffic pattern: left      left

Runway heading: 077 magnetic, 090 true      257 magnetic, 270 true

Markings: nonprecision, in fair condition      precision, in poor condition

Visual slope indicator:      4-box VASI on left (3.00 degrees glide path)

Runway end identifier lights: no      no  
 Touchdown point: yes, no lights      yes, no lights



**NOT FOR NAVIGATION.** Please procure official charts for flight.  
 FAA instrument procedures published for use between 28 October 2004 at 0901Z and  
 25 November 2004 at 0900Z.

**IAPs - Instrument Approach Procedures**

- RNAV (GPS) RWY 26 download (185KB)
- VOR/DME RWY 26 download (202KB)
- VOR/DME-A download (181KB)
- NOTE: Special Alternate Minimums apply download (18KB)
- NOTE: Special Take-Off Minimums apply download (42KB)

Other nearby airports with instrument procedures:

- P20 - Avi Suquilla Airport (39 nm NE)
- KLGF - Laguna Army Airfield (Yuma Proving Ground) (48 nm S)
- KCLR - Cliff Hatfield Memorial Airport (50 nm SW)
- KBWC - Brawley Municipal Airport (55 nm SW)
- KYUM - Yuma Marine Corps Air Station/Yuma International Airport (58 nm S)

**FBOs, Fuel Providers, and Aircraft Ground Support**

Business Name	Contact	Services / Description	Fuel Prices	Comments
Wolfe Enterprise	760-922-6125		100LL Jet A \$3.17 \$2.22 Updated 30-Oct-2004	11 view add

**UPDATE PRICES**

**Where to Stay: Hotels, Motels, Resorts, B&Bs, Campgrounds**

In this space we feature lodging establishments that are convenient to the Blythe Airport. If your hotel/inn/B&B/resort is near the Blythe Airport, provides convenient transportation, or is otherwise attractive to pilots, flight crews, and airport users, consider listing it here.

**FEATURE A LODGING ESTABLISHMENT**

**Hotels in other cities near Blythe Airport**

- 6 in Blythe
- 1 in Ehrenberg, AZ

**Would you like to see your business listed on this page?**

If your business provides an interesting product or service to pilots, flight crews, aircraft, or users of the Blythe Airport, you should consider listing it here. To start the listing process, click on the button below

**ADD YOUR BUSINESS OR SERVICE**