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Shell Mera

Dec. 29<sup>th</sup>, 55

Dear Grady, Charlie, Don, Jim (if there), et al:

[First paragraph marked Confidential in handwriting]

First off .... This will be the last opportunity to write before we make an effort to reach the wild boys. The operation is to begin next Tues. or Wed., the Lord willing. We're all glad to be getting under way. The suspense is killing. Please pray definitely for us.... For safety and for a good solid contact and the beginning of language work and the beginning of an airstrip that would permit direct access to whatever personnel might be working among them. There are very few in this group, yet we're quite sure they are responsible for recent killings, and we trust they will give us access to others.

Next; first indication of valve trouble on the 135<sup>th</sup> occurred at 460 hrs. The symptom: valve sticking open when throttle was closed after landing, that is during taxing after a trip. Whenever the coal was applied it disappeared. Whenever it appeared it lasted thru perhaps two to four compression stroked. There was no symptoms in the air whatsoever. When I took off the covers (rocker) and spring I found all four of them running "in a groove" of build-up. They apparently don't rotate in operation so that the build-up on the neck of the valve and the recessed end of the guide become such as to positively prevent rotation and finally cause sticking. We gave them the scrapping treatment and in doing so found the right rear one eaten or burned away to such an extent (on the side facing the center of the cylinder) that we pulled the jug and replaced it.

We found the jug to be quite clean. There was almost no sigh of carbon in the head....only the lead deposits which by their shape lend one to believe that they eliminate themselves by either softening and loosening and going out the exhaust port or something like that. The absence of carbon build-up we naturally associate with the #60 oil we are using. At 460 hrs. we are still getting 8 to 10 hours on a quart. We are changing oil at around 30 hrs.... sometimes without having added to it. The inside of the engine looked span clean.

While under the hood we found (hold onto your seat) a broken engine mount (upper right). It had apparently cracked  $\frac{3}{4}$  of the way around before breaking under a strain load (evidenced by the stretch in the metal at the uncracked area. We guess at several possibilities.... The mounts are not real tight. I have tendency not to tighten things too much. You know what I mean. Where one fellow tightens the stuffins out of stuff so it won't come loose, I end to go easy on it so that the

pre-loading won't break it before the design load is approximated. It probably happened about two days before I caught it. I began to notice an unusual looseness in the engine mounting when shutting it off. It hit a harmonic at around 500 RPM (guess) and I even remarked to someone that I was going to have to snug up on the mounts. It wasn't too noticeable, but sufficient that I did begin to notice it. I suppose I must have flown 8 hrs. with it that way, unsuspecting. In the air there was no symptoms at all. We repaired by welding and then overlaying a sleeve welded to the orig tube. We'll keep an eye peeled for any further trouble. I mention it in particular so that you can either beef up the Cruiser mount for Cax (spell) or advise the pilot to keep an eye peeled. The crack occurred just forward of the fire-wall cluster gusset that supports the muffler carrying spring and rod assembly, or about 4 " forward of the firewall.

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I have returned herewith to an old inspection custom of tapping each tube with a screwdriver handle. You get used to the normal "bing" sound and keep in a position to here that dull boong of an unsupported tube end. I started doing that after very accidentally discovering a clean break under a ring of friction tape. I just happened to tape the tube and heard it....buunge. I just share this for common edification. I have been tremendously edified.

John has been down with a round of malaria but is back in the saddle now. Everything seems to be going fine. We're looking for the arrival of the Helioplane, hoping nobody breaks his neck trying to land it in 400 ft. from stumps to stumps. Actually the fellows must see the folly. They are already pushing their strips up to 600 ft.

The transfer of property to HCJB is going ahead. Nothing new on the local school.

We all had a lovely Christmas here. Marj says the finest we've every had and I quite agree. [Next sentence written in pencil] Larry Keenan says "That's because we (the Kennans) are here."

We're starting work on a separate iron working shop...a separate building in order to get the hazard of welding out of and away from the hangar. I think this will be outlast undertaking between now and furlough. This special project has really taken more than appears on the surface. In time it takes at least one of our six working days... but it somehow takes more out of a fellow than 1/6<sup>th</sup> of his weekly supply of hemoglobin.

We have the three Pacer shocks we ordered to be sent to Rachel in Huntingdon Valley.... I mean we will still have them in H. V. Some well-intentioned person volunteered to "expedite" missionary shipments and it got so fouled up we decided to cancel it. We feel pretty sure by now we won't be needing them before the Pacer is disposed of (Shocks from new wider gear on ould narrow set-up.) barring accident. Should we have them sent back to you for redemption or transfer to some other program or try to sell them in east or hold them or what. Personally I would feel best about sending them to you for disposition.

What's cooking on Ecuador's rates. We know you don't have a thing to do these days.... Hi. But it has been two years since program hours doubled and more and more it would seem that as long as we're using the Piper's we ought to be closer to the rates of the other Piper programs.

Again, thanks for all you for us right along and for you personal notes from time to time.

Cordially in Christ,

Nate

P.s. Would appreciate your inquiring to see if the 135 has any history of swallowing valves, How dangerous (potentially) do you suppose a valve like this might be?